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ABSTRACT

This report proposes an agenda that business leaders can use to help improve education. It is the result of the 1999 National Education Summit at which business leaders, governors, and educators pledged to improve the quality of teaching with significantly increased investments in teachers and accountability for results. Recommendations were forged through a national dialogue with business leaders, governors, teachers, administrators, and teacher educators. Specific input was gathered from these stakeholders at various regional meetings. The report calls on states and communities to use this agenda as an overall framework to improve teaching quality. It recommends that states and communities: (1) create a new model of teacher preparation and professional development to provide teachers with the knowledge and tools to do their job, thus helping all students reach high academic standards; (2) create a new model of pay tied to performance and a new employment contract that spells out expectations of teachers as well as assistance and incentives that will be available for them; and (3) create a new school environment that reflects teachers' expertise and provides them with the freedom and flexibility to achieve results. An appendix describes increased state spending to support teachers. The databook presents information on various issues related to teacher quality, such as: (1) how teacher effectiveness impacts student achievement; (2) how many teachers are needed over the next 10 years; (3) how prepared teachers feel; (4) how qualified teachers are; (5) how prepared public school teachers are to teach

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their subjects; (6) recruiting teachers to high poverty schools; (7) how much time teachers spend in professional development activities; (8) teacher training and student test scores; and (9) how much time teachers have to prepare for class. Teacher data for all 50 states are appended. (Contains 23 references.) (SM)

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Profession (n): A calling requiring specialized knowledge and often long and intensive preparation including instruction in skills and methods as well as in the scientific, historical, or scholarly principles underlying such skills and methods, maintaining by force of organization or concerted opinion high standards of achievement and conduct, and committing its members to continued study and a kind of work which has for its prime purpose the rendering of a public service.

Gove, Philip Babcock. Webster's Third International Dictionary. Springfield: Merriam-Webster, Inc. 1961

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Executive Summary

Investing in Teaching:
A Common Agenda

Business leaders are committed to improving public schools in this country. Our interest is motivated by the reality that students need increased skills and knowledge to be successful in the workforce, higher education, and in life.

Business leaders have focused on ensuring clearer and higher standards, assessments, and accountability for student learning in every school, and we are heartened by the progress now being made in states and school districts. Making sure all children—and not just a lucky few—are challenged by rigorous academic expectations is an imperative.

However, we know that raising standards is only the first step in helping schools improve. Without high quality teachers, our efforts to improve student achievement are destined to fail. Research has shown again and again that teachers can make the critical difference in whether or not a student succeeds. We know that if students are to meet ambitious expectations, they must have superbly prepared teachers equal to the task. And while we know other changes must be made in schools and their administration, we recognize that this one—the quality of teaching—is paramount.

Therefore, as corporate leaders who are committed to higher standards and improved performance in public schools, we commit ourselves to work with equal vigor and advocacy on the task of ensuring an effective teacher for every child. To achieve this goal, we propose an agenda that will elevate teaching to a profession.

We must approach all of the elements of the profession—teacher education, professional development, and compensation. We call on states and communities to use this agenda as an overall framework to improve the quality of teaching. Together, we must:

1. Create a new model of teacher preparation and professional development.
If teachers as professionals are essential to helping all students reach high academic standards, we must provide them with the knowledge and tools to do the job.

- **Preparation:** Schools of education should raise admissions requirements and work with arts and sciences faculties to offer high-quality preparation programs. New alternative certification programs should create opportunities for non-traditional candidates to enter the teaching profession. Regardless of their preparation program, teachers should be rigorously tested before they are licensed to ensure mastery of the subjects they teach and knowledge of how to teach those subjects to students.
- **Professional Development:** Beginning teachers need extra support so that they can become full-fledged professionals. Practicing teachers need professional development that is adequately funded, of continuing high quality, and designed to enhance professional learning in the service of improving student achievement. Time must be built into the school day and calendar year for such professional development to occur.
- **National Board Certification:** The National Board for Professional Teaching Standards provides a valuable process for recognizing and rewarding excellent teachers. We believe every school should have a cadre of "master" teachers certified by the National Board.

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2. Create a new model of pay tied to performance and a new employment compact.

As we raise expectations of teachers, we also must raise standards for the profession: how teachers are paid, what career options are available, and how teaching effectiveness is evaluated.

- **Compensation:** Teachers need to be paid more so that teaching is competitive with other professions and pay is consistent with the new requirements for teachers. But compensation must be based on performance, providing added benefit to those who improve their knowledge and skills and increase their impact on student learning. We also must create incentives to attract teachers to shortage fields and hard-to-staff and low-performing schools.
- **Career Opportunities:** Teachers must have access to a range of job-related roles for growth *within* the profession, such as serving as mentors for new teachers, peer assessors, or adjunct university faculty. School districts should deal with teachers on a year-round schedule—compensating teachers for differentiated responsibilities on differentiated calendars and providing more time for professional development.
- **Employment Compact:** To make this system work, teachers need time-specific employment compacts that spell out expectations of teachers as well as assistance and incentives that will be available for them. And, we must overhaul teacher evaluation systems so that they are credible, fair, and based on standards of good teaching and evidence of student learning.

3. Create a new school environment that provides teachers with the freedom and flexibility to achieve results.

Teachers deserve a professional environment that respects their expertise. As clearer academic standards focus schools on achieving results, schools—and the teachers in them—must have the flexibility to use resources and personnel in ways that advance student achievement goals.

- **Increased Flexibility:** Decision-making authority in school districts should be decentralized—with teachers able to design instructional programs and school staff given significant budget authority and hiring flexibility. Teachers must also have tools—from resources like office space and technology to job-related information—to make smart decisions that help them do their jobs better.
- **Portable Credentials and Pensions:** In order to create an environment that encourages teachers to move where they are needed most, we need portable teaching licenses and a voluntary national retirement plan.

We understand that this vision of the teaching profession will require substantial new investments as well as tough decisions about existing school resources. In communities all across this country, people have made the investments necessary to implement each of the ideas we propose. We will work with district and school leaders to review and help reprioritize budgets and with state leaders to find new funding sources for these changes. We make these recommendations in recognition of the enormous effect technology will have on education over the next ten years.

Change is never easy and rarely cost-free. The business community recognizes that the agenda we propose for teaching quality is significant and will take the better part of this decade to accomplish. As we've done for higher standards and improved accountability in schools, we're ready to work tenaciously to implement this agenda for however long it takes.

We commit to this difficult task because we believe so strongly that it will return huge dividends for American students. Our conviction is that every child needs a great teacher, and we believe this agenda will enable us to accomplish that goal.

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Introduction

"America's future depends now, as never before, on our ability to teach. If every citizen is to be prepared for a democratic society whose major product is knowledge, every teacher must know how to teach students in ways that help them reach high levels of intellectual and social competence."

— Louis V. Gerstner, Jr.
Chairman and CEO, IBM

Business leaders recognize that student achievement is essential to individual well-being and the competitiveness of our workforce. At the 1996 National Education Summit business leaders and governors gathered in Palisades, New York and committed to improving student achievement. Working with educators and policymakers, business leaders across the country have helped lead efforts to advocate for standards, assessments, and accountability in our schools, all of which are essential to ensuring high student achievement. However, we realize that all our efforts are destined to fail without high quality teachers in every classroom. At the 1999 National Education Summit business leaders, governors, and educators promised to significantly increase investments in and accountability for teachers in order to create a system that enables teachers to meet the challenge of bringing all students to high standards. In partnership with business leaders and business organizations, the National Alliance of Business has undertaken a year-long analysis of the issues facing the teaching profession.

The times demand a renaissance in teaching. If we are to remain true to our commitment to provide all students the opportunity to achieve at high levels we must have superbly prepared teachers equal to the task.

We will not get there unless we expect much of teachers —and ensure they have the knowledge and tools to do their jobs effectively. We will not get there without fundamental changes in the way we prepare, support, and compensate teachers. We will not get there until we accord teachers the respect their status as professionals demands. We will not get there unless we resolve that this task—ensuring a high quality teacher in every classroom in this country—is among the most important before us. And we will not get there until we commit our energy, intelligence, and will to making it a reality.

"In a truly rational society, the best of us would be teachers and the rest would have to settle for something else."

— Lee Iacocca
Former President and Chairman, Chrysler Corporation

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A study conducted in Dallas, Texas found that the scores of students who started out in the 60th percentile in reading and in math were drastically affected by whether students had been exposed to effective or ineffective teachers over a period of three years.

How Many Teachers Do We Need to Hire Over the Next 10 Years?

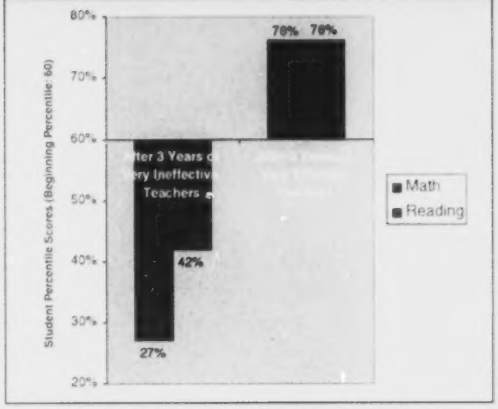
The nation's schools will need to hire an estimated **2.2 million public school teachers** (including both beginning teachers and those returning to the classroom) in the next decade to serve the growing enrollment of students and to fill a record number of vacancies as the first "baby boomers" begin to retire.

Source: U.S. Department of Education, *A Back to School Special Report on the Baby Boom Echo: No End in Sight*, 1999.

How Prepared Do Teachers Feel?

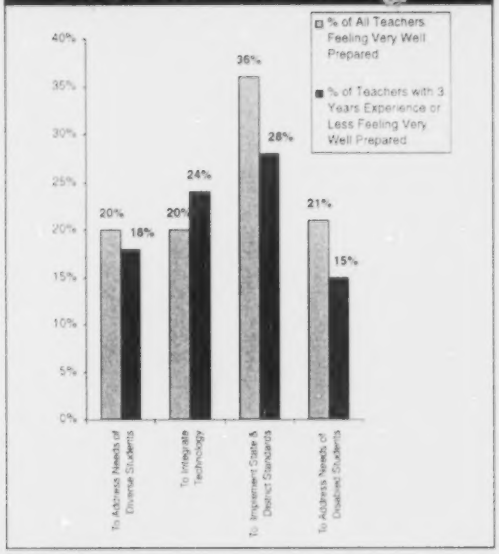
Most of today's teachers feel ill-prepared to address the needs of diverse students, integrate technology into the classroom, implement state and district standards, and address the needs of disabled students.

Cumulative Effects of Teaching on Fifth Grade Math and Sixth Grade Reading Scores: Dallas, Texas



Source: Jordan, Mendro & Weerasinghe, *Teacher Effects on Longitudinal Student Achievement*, 1997. Figure based on "Overhead 2" from *A Talented, Dedicated, and Well-Prepared Teacher in Every Classroom: Information Kit*, U.S. Department of Education, September 2000.

Percent of Teachers Feeling "Very Well Prepared" to Perform Their Duties



Source: U.S. Department of Education, National Center for Education Statistics, *Teacher Quality: A Report on the Preparation and Qualification of Public School Teachers*, 1999.

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Aligning the System

The business community is committed to standards, assessments, and accountability. We understand that in order for students to reach high standards, teachers must be prepared and supported in teaching to standards.

Teacher preparation programs must ready teachers to teach in a standards-based system by aligning courses within arts and sciences and schools of education and tying teacher preparation to student standards. Professional development must be designed around improving the knowledge and skills necessary to help all students reach standards. Compensation must be awarded based on teachers' contributions to student learning. And teachers' professional roles and responsibilities must be structured so as to afford them the flexibility to adapt their practice to meet students' instructional needs.

Financing the Changes

If we know that high quality teaching is central to student achievement, then we must be willing to invest substantial resources to help teachers ensure that students meet high academic standards. In order to make these investments, we must consider whether we are using current resources in the ways in which they will do the most good. We must be creative about ways to reallocate resources and use dollars in ways designed to produce the greatest impact. And we must hold ourselves accountable for how these dollars are spent.

In some instances, we must consider new investments. Many states and communities are already taking steps to make these investments, and we must find ways to help others do so as well. For every recommendation we include in this report, we also include an example of some place that has found the money—and the will—to implement the idea.

Finally, we must realize that making the necessary investments will take time. The agenda we put forth here is meant to be a long-term framework for change.

A Call to Action

We call on business leaders, policymakers, governors, school boards, and educators to work together to elevate teaching to a profession. As states and communities embark on this process, we ask them to judge their efforts against a high standard. And we commit to making substantial financial, social, and political investments in teaching for however long it takes to accomplish this goal.

This is also demonstrated by the additional examples included in the Appendix.

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The recommendations in this report must be taken as a coherent package. We will not improve the quality of teaching by upgrading teacher education or improving professional development or changing the compensation structure. All of the elements must be tackled to create an aligned system that supports teachers. Only through this type of comprehensive reform can we raise teaching to the level of respect and status it requires and deserves. Our students are entitled to nothing less.

About This Report

This report comes as a result of the 1999 National Education Summit at which business leaders, governors, and educators pledged a campaign to improve the quality of teaching with significantly increased investments in teachers and accountability for results. Our recommendations have been forged through a national dialogue with business leaders, governors, teachers, administrators, and teacher educators. Specific input was gathered from these key stakeholders at a series of regional meetings held across the country. It is important to understand that each of the recommendations in this report has been implemented in some shape or form somewhere. Examples throughout the report show states and communities that are already implementing pieces of this agenda.

The outcome of this process is a series of recommendations based on three key principles:

- **A New Model Of Teacher Preparation And Professional Development**—Ensure that new teachers are better prepared and experienced teachers have a clear mastery of new standards and the teaching strategies that can help students achieve;
- **A New Model Of Pay Tied To Performance And A New Employment Compact**—Reaffirm the professional status of teachers by providing increased pay tied to performance, fair systems of evaluation, and a new employment compact; and
- **A New Environment That Provides Teachers With The Freedom And Flexibility To Achieve Results**—Within a standards-based system, provide teachers and schools with the decision-making freedom and flexibility to enable them to achieve higher student achievement results.

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Preparation & Professional Development

A NEW MODEL OF TEACHER PREPARATION AND PROFESSIONAL DEVELOPMENT

If teachers as respected professionals are to be entrusted with responsibility for helping all students reach high academic standards, we must provide them with the knowledge and tools to do the job. This means ensuring that:

- colleges and universities offer high quality preparation programs and graduates of alternative programs are equally well prepared;
- teachers are tested before they are licensed to ensure mastery of the subjects they teach as well as knowledge of how to teach these subjects to students;
- beginning teachers have adequate support so that they become full-fledged professionals able to manage the challenges of the job; and
- professional development for practicing teachers is adequately funded, of continuing high quality, and designed to enhance professional learning in the service of improving student achievement.

Teacher Preparation

The vast majority of teachers receive their professional preparation in a college or university. Preparation programs for other professions tend to be competitive, rigorous, and thorough. Yet critics for years have complained that standards at schools of education are lax and should be raised.

Entrance to teacher education typically occurs during the junior year of college and requires little more than a "C" average in previously completed coursework. Currently, teacher preparation often focuses heavily on the process of teaching and insufficiently on the content. Coordination of preparation with the standards teachers will be responsible for helping students meet is weak, at best. Teachers are then licensed without having demonstrated mastery of the knowledge and skills essential for effective practice.

Our nation's children need teachers who are prepared to meet a higher threshold. Their professional preparation must be exemplary. And, as in other professions, teacher licensing ought to provide public assurance of the readiness of the individuals to assume their new responsibilities.

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■ *Raise the bar for admission to teacher preparation.*

Applicants to teacher education programs should be required to display evidence of substantial academic achievement such as a grade point average of at least 3.0 in the first two years of college and completion of a coherent core of liberal arts courses. This first step toward entering the teaching profession must be the candidate's initial demonstration of seriousness of purpose and commitment to the kind of scholarship teaching entails.

Standards for Teacher Education in Pennsylvania

Pennsylvania is beginning a three-year phase-in of higher admission standards to the state's teacher education programs. Under the new standards, students will be required to earn a cumulative 3.0 grade point average for entry into, and graduation from, teacher preparation programs. The regulations require that prospective teachers complete the same core academic courses and subject-based electives as do other students majoring in a discipline.

The new state standards provide for options and exceptions. For example, teacher education programs can accept students with GPAs of 2.8 if they scored at least 1050 on the SAT, with neither math nor verbal scores below 500. Colleges in which at least 90 percent of the graduates pass state teacher certification exams in their subjects also have the option of slightly reducing the minimum GPA requirement.

Other states, such as Georgia, North Carolina, and Oklahoma are also moving in this direction.

For more information, please contact the Pennsylvania Department of Education at (717) 783-6788 or visit www.pde.psu.edu.

■ *Require that all teacher preparation programs be accredited.*

A recent report by the American Council on Education concluded that academic quality controls within teacher education programs are often inadequate because programs lack "regular and reliable" internal assessments and too few submit themselves to external evaluations (American Council on Education, 1999). As a means of assuring continuing quality, teacher education programs must be accredited and states and districts should be encouraged to hire teachers from accredited institutions.

Accreditation should be based on indicators such as: the extent to which program requirements align with the standards established by the National Board for Professional Teaching Standards; program efforts to recruit a diverse cohort of teaching candidates; internal alignment of education courses with required arts and sciences courses; percent of graduates who pass licensing exams; and graduates' on-the-job performance.

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NCATE Accreditation

The National Council for Accreditation of Teacher Education (NCATE) has recently adopted new performance-based standards that require that teacher education programs seeking accreditation offer substantial evidence that their graduates have in-depth subject matter knowledge and a clear understanding of how to teach their subjects to students.

To become NCATE-accredited, teacher preparation institutions must submit a self-study that describes how they meet NCATE standards, including evidence that candidates know their subject matter and can teach it effectively, that the program prepares teachers for diverse student populations and offers rigorous and deep clinical experiences, and that assessments of faculty performance and development are performed. Institutions are then reviewed by a visiting NCATE team to assess program strengths and weaknesses with regard to the standards. NCATE's Unit Accreditation Board makes the final accreditation decision.

Five states require that all schools of education be NCATE-accredited and 17 states require that all public institutions be NCATE-accredited. All-in-all 500 schools are now accredited by NCATE and 100 schools are actively seeking to become so.

For more information, please contact NCATE at (202) 466-7496 or www.ncate.org.

■ *Require all teacher candidates to complete an academic major and at least one minor.*

It is time to end the undergraduate education major. Put simply, teachers need to know well the subject(s) they teach.

A recent study by the Educational Testing Service (ETS) revealed that 8th grade students whose teachers had majored or minored in mathematics scored 40 percent higher, relative to the average grade level score, on the National Assessment of Educational Progress (NAEP) than did students whose teachers did not have a math major or minor (Wenglinsky, 2000). And if we needed more evidence that teachers need a solid grounding in the subjects they teach, the recent TIMSS-R study showed that between 1995 and 1999, there was no change in eighth grade math or science achievement in the U.S. In fact, the relative performance of U.S. fourth-graders declined when they reached the eighth grade in comparison to the performance of the sixteen other countries tested in 1995. At the same time, TIMSS-R showed that U.S. students are far less likely to be taught by teachers who majored in mathematics.

According to the U.S. Department of Education, nearly 80 percent of elementary teachers and 20 percent of secondary teachers major in education, a weak constellation of loosely coupled, often shallow courses in which subject matter knowledge plays only a supporting role. The academic standards for students are content-driven. They center on subjects like mathematics, science, literature and composition, and history. If teachers are to be well-prepared to teach to these standards, they must have the requisite disciplinary background.

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All teachers should be required to complete an academic major and at least one minor in a subject commonly taught in elementary or secondary school. Elementary teachers should be able to select as a major a subject that most captures their intellectual interest and is commonly taught in elementary school, such as English, mathematics, or science. Their minor could be education, with a heavy emphasis on literacy and numeracy. Secondary teachers should select as major and minor the subjects they plan to teach.

The major/minor requirement does not diminish the need for education courses in areas such as how children develop cognitively, psychologically, and physically; how people learn; effective strategies for teaching specific subjects; and preparation for teaching a diverse population. These topics, and well-grounded clinical experience that prepares teacher candidates to teach in real schools, must also be part of teachers' professional preparation.

Various program designs combine subject matter and pedagogical preparation. "Blended" four-year programs, five-year programs in which the fifth year consists solely of the pedagogy of teaching, and fifth year programs that admit graduate students who have completed a Bachelor's degree are some of the options.

■ *Establish a performance-based licensing system.*

Professionals expect to demonstrate their readiness to practice prior to being licensed. While all but nine states require tests of new teachers, most of these exams assess only minimum competence and even at that, set alarmingly low scores for passing. About half the states do not even require high school teachers to be tested in the subject(s) they plan to teach (*Quality Counts*, 1999).

All prospective teachers must be required to pass rigorous exams that test subject matter knowledge as well as teachers' understanding of how to teach those subjects effectively to students. These exams would ensure that teachers are prepared to meet the challenge of teaching to established academic standards. Secondary teachers should take subject matter and pedagogy exams in the subject(s) they plan to teach. Elementary teachers should take a subject matter exam in the area in which they majored and a pedagogy exam which includes demonstrated knowledge of strategies for teaching reading and mathematics.

INTASC: Assessing New Teachers

The Interstate New Teacher Assessment and Support Consortium (INTASC), created by the Council of Chief State School Officers, has produced discipline- and pedagogy-based standards in mathematics, science, language arts, and history for secondary schools; in general elementary education; and in special education. INTASC is working with the Educational Testing Service (ETS) on an assessment of pedagogical and professional knowledge and on a portfolio approach to assessing teaching performance.

For more information, please contact Jean Miller, Director, Council of Chief State School Officers, at (202) 336-7048 or jeanm@ccsso.org

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Teacher Education at Trinity University

Teacher education at Trinity University in San Antonio, Texas is a five-year undertaking. The program, developed by faculty in Education and Letters and Sciences and experienced teachers, results in students earning a discipline-based Bachelor's degree and a Master of Arts in Teaching.

Formal admission to teacher education occurs at the end of the sophomore year and requires at least a 3.0 grade point average, a passing score on the Texas professional skills test, and approval by a joint committee of Education and Letters and Sciences faculty. From their sophomore year on, students take academic and education courses and have hands-on supervised classroom experience in local schools under the guidance of master teachers. At the end of the fourth year, students have a full-year induction under the supervision of experienced classroom teachers.

As testament to Trinity's success, all of the teacher education students are offered jobs as soon as—and sometimes before—they graduate.

For more information, please contact John Moore, Murchison Distinguished Professor and Chair, Department of Education, Trinity University, at (210) 999-7506 or jmoore@trinity.edu.

Finally, these exams must be aligned to standards. The Educational Testing Service, for example, is aligning its Praxis II content examinations with the teaching standards of each of the professional associations, such as the National Council of Teachers of Mathematics and the National Science Teachers Association.

Alternative Certification

Meeting the need for two million new teachers in the next decade will require all the creativity and ingenuity we can muster. We must be willing to think in bold new ways—more flexible, user-friendly, and accessible—about alternative means, outside traditional university-based programs, of certifying teachers to teach. We must look widely for potential teachers, and we must consider ways to use individuals who may only be interested in teaching for a few years.

Alternative programs can be an important source of new teacher talent. They can serve as magnets to attract bright college graduates or mid-career professionals to education. Teach for America, for example, has sparked interest in teaching among graduates of some of this nation's most prestigious colleges and universities. And alternative certification programs can be an important source of minority teaching candidates. New Jersey's Provisional Teacher Program, for example, has expanded the diversity of that state's teaching pool.

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But as we expand the supply of teacher preparation alternatives we must guard against using alternative routes as the cut-rate path to teaching.

■ *Promote high quality alternative certification programs.*

Alternative certification programs, regardless of where or how they are offered—at a college or university, at or by a school district, by a private provider—must be rigorous and comprehensive. Most importantly, they must provide prospective teachers with the requisite knowledge and skills to teach successfully to student achievement standards.

■ *Require that graduates of alternative certification programs pass performance-based licensing exams.*

Graduates of alternative certification programs must be required to demonstrate that they have met established standards of professional practice.

By expanding the means by which teachers are prepared without reducing the standards that certify appropriate professional preparation, we can greatly increase the number of quality teachers available for our classrooms.

The Sylvan Teachers Institute

The Sylvan Teachers Institute is a year-long teacher preparation program operated by Sylvan Learning Systems. The Institute contracts with states and local school districts (currently they have contracts in Maryland, Texas, and Wisconsin), tailors their program to state and district needs, and adheres to state licensing regulations. Sylvan focuses on equipping graduates to teach in a standards-based system.

Sylvan participants enter the program with Bachelor's degrees. They receive intensive summer training and coursework throughout the school year focused on instruction and assessment, classroom management, and curriculum. Technology is integral to the program. Students are guided by "instructional managers," recently retired teachers who act as mentors and supervisors.

Sylvan has recently graduated its first class of 100 teachers prepared for the Prince George's County, Maryland schools.

For more information please contact Dean Nafziger, Senior Vice President, Sylvan Education Services, at (410) 843-8039 or dnafziger@educate.com.

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Beginning Teachers

Most professions require a period of induction, a time when a new practitioner is oriented to the work and introduced to professional obligations and responsibilities. The medical profession, for example, would not think of allowing a newly-certified doctor to immediately begin practicing medicine without supervision or additional training.

Yet just ten states require induction programs for new teachers and pay for them. And only half the beginning teachers in this country participate in induction beyond nuts-and-bolts new teacher orientation.

Research shows that beginning teachers who participate in induction programs under the guidance of experienced teachers are twice as likely to stay in teaching as those who have no induction. And, as the National Commission on Teaching and America's Future reported, teachers who are mentored in their early years move more quickly and easily from classroom management concerns to issues of improving student learning (National Commission on Teaching and America's Future, 1996).

If we are to retain new teachers in the profession—currently 30 percent leave within their first three years on the job—we must support them in the early years of their career.

■ *Develop and implement required induction programs for all new teachers.*

All first-year teachers should participate in mandatory, intensive induction programs, conducted by experienced teachers who serve as mentors. The induction program should be designed to meld the theory of college coursework with the practice of classroom experience. It should provide novices with a firm grounding in the outcomes their students are expected to achieve, and it should serve as an opportunity for experienced professionals to share their expertise with new entrants into the profession. School districts should be required to ensure that new teachers have access to these programs.

Teacher Induction in California

California's Beginning Teacher Support and Assessment Program (BTSA) is a two-year induction designed to provide intensive support for new teachers.

Under BTSA, which was established in 1992, beginning teachers work one-on-one with mentors, develop individual growth plans, and receive classroom-based professional development. Additional training is provided after school and on weekends.

The program, which currently serves more than 25,000 beginning teachers, has been shown to significantly increase teacher retention rates. The state plans to make the program mandatory for new teachers in the next two to three years.

For more information, please contact the California Commission on the Teaching Profession at (916) 445-3224.

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■ *Provide beginning teachers with reduced teaching loads and manageable assignments.*

In most professions, new practitioners have a chance to ease into their professional responsibilities. New lawyers' first cases are often supervised by more experienced attorneys. New doctors are not assigned the most difficult medical cases.

New teachers, too, need the opportunity to become acquainted with "real world" teaching. They need the chance to watch high quality experienced teachers in action. And they need classes that give them a fair chance to get their professional sea legs.

In keeping with a manageable introduction to the profession, then, beginning teachers ought to have reduced teaching loads that provide them with time during the school day to work on their own teaching and learn by observing other teachers. And we must break the cycle that tends to place beginning teachers in the most challenging teaching assignments. A brand new teacher should not be assigned to a low-performing classroom or school.

New York State has taken an important step in this direction. Commissioner Rick Mills, New York's chief state school officer, has issued a directive to school districts that beginning teachers not be placed in low-performing schools. This is requiring districts to rethink their teacher assignment policies.

Professional Development

"We need expert teachers to help all students reach higher and more rigorous standards. Business leaders realize that teachers need time and support in order to change their teaching strategies so that they align with these new standards."

— Leslie Graitcer, Executive Director
BellSouth Foundation

Continuing education is one of the hallmarks of a profession. Lawyers are expected to keep abreast of new developments in the law, CPAs of new accounting policies and regulations. In order to keep their practice sharp, professionals need ongoing and abundant opportunities to develop their skills and hone their knowledge.

We should expect, and provide, no less for teachers. This will entail increasing the quality of, time committed to, and investment in, teachers' professional development.

■ *Provide all teachers with high quality professional development.*

In most professions, ongoing training is designed to increase knowledge, improve professional practice, and contribute to improved results. Time is set aside for such continuous learning and improvement of job-related skills.

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Professional development for teachers must be designed along these same lines. It must be aligned to state standards, based on research about teaching and learning, and specifically linked to improving the quality of teaching to increase student achievement. And time must be set aside within the salaried workday for such activities to take place.

We know what effective professional development looks like. It is subject-matter based, constructed around the standards for which teachers are responsible, and designed to enhance the skills teachers need to be successful in their schools and classrooms (Corcoran, 1995). Effective professional development can take a number of forms—college and university courses, courses and workshops offered by community colleges, school-based teacher-to-teacher discussion groups focused on curriculum and analysis of student work, and cross-school teacher networks. A recent study by ETS revealed that the students of teachers who participated in professional development on teaching higher-order mathematics thinking skills and science laboratory skills posted scores on the National Assessment of Educational Progress (NAEP) that were 40 percent and 44 percent higher, respectively, relative to average grade level scores, than students whose teachers had not participated in such professional development (Wenglinsky, 2000).

Most teachers' experiences with professional development fall far short of the ideal. One-shot workshops and college courses disconnected from teachers' job assignments predominate, despite a U.S. Department of Education study which shows that conventional professional development is unlikely to either produce long-term improvements in teacher learning or contribute effectively to student learning (U.S. Department of Education, 1999).

Teachers must have regular access to professional development that hews more closely to what we know to be effective, and they must have the opportunity to help design professional development that is suited to their needs. Professional development ought to provide high quality opportunities for teachers to gain deeper knowledge of the subjects they teach and engage in professional conversations with colleagues. It should help teachers develop the skills to use technology to enhance their teaching. [According to a recent U.S. Department of Education survey, just 20 percent of teachers say they feel "very well prepared" to integrate technology into their teaching (U.S. Department of Education, 1999)]. And it ought to provide time for teachers to understand the workplace demands their students will face through educator-in-the-workplace programs.

■ ***Provide teachers with adequate time to engage in professional development.***

Professionals—doctors, lawyers, CPAs, architects, engineers—view participating in professional development, conferring with colleagues, and reflecting on their own work as part of their jobs. They expect to have, and are provided with, time for these activities.

Teachers, by contrast, have little time for professional growth. American teachers receive an annual average of just eight hours per year of professional development. By comparison, Japanese teachers in the elementary grades have 90 hours annually of professional development; junior and senior high school teachers' teaching time is reduced by ten hours a week for in-service training. American schools and districts should increase the amount of time teachers have for professional development until our teachers receive a similar level of support.

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We can find this time through a variety of means, including year-round paid calendars for at least some teachers, differentiated staffing to free teachers from their classrooms for part of the day, and, where possible, reduced course or student loads. In addition, this time must be predictable. Teachers must know when it will be available so they can plan for its most effective use.

■ *Increase the investment in teacher professional development.*

Expanding and improving professional development will require investments. Currently, districts allocate approximately one to three percent of their budgets to professional development. Some districts—District 2 in New York City, for example—have found ways to redeploy existing resources to meet professional development needs. District 2 now dedicates seven percent of its budget to teacher professional development.

States and districts should examine their budgets to determine if existing dollars—perhaps already devoted to professional development, perhaps not—might be dedicated to teacher professional growth. They must evaluate whether current dollars are being spent on activities that truly help teachers with their practice. Where those dollars are inadequate, infusions of new dollars are in order.

Finding Time and Money in Bellevue, Washington

A new agreement between the Bellevue, Washington school district and the Bellevue Education Association substantially increases the time teachers have for professional development. The district has added 20 days to the teacher calendar, all paid for out of the district budget. Ten of those days are used for designated purposes: two for technology instruction for teachers (all teachers will be provided with a laptop computer); three for state-required "learning improvement" days focused on district achievement goals; and five for school-based lesson study in which teachers work in teams developing and polishing lesson plans and curricular units and reviewing student work.

The remaining 10 days are available for teachers to work, at school or away from school, on their own planning, curriculum development, paper grading, and the like.

For more information, please contact Peter Bogdanoff, President, Bellevue Education Association, at (425) 455-1280 or pbogdanoff@wa.nea.org.

The El Paso Collaborative

The El Paso Collaborative, a consortium of three El Paso-area school districts and the University of Texas at El Paso, is using professional development as the trigger for improved student achievement. The goal is to raise achievement levels, beginning with kindergarten, and prepare all students in this impoverished area to enter college without requiring remediation. Teachers receive intensive professional development, including summer institutes and on-site coaching, all focused on improving instruction. Still a work-in-progress, the El Paso Collaborative already is demonstrating steady results in student test scores.

For more information, please contact Susanna Navarro, El Paso Collaborative for Academic Excellence, at (915) 747-5778.

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■ *Strive to ensure that every school has visible representation of National Board Certified teachers.*

Many professions offer board certification for practitioners who demonstrate high levels of professional accomplishment. These individuals command higher salaries and assume added professional responsibilities. Teaching has an analog.

The National Board for Professional Teaching Standards, an independent, non-partisan organization, has established high and rigorous standards detailing what accomplished teachers should know and be able to do. Successfully completing a set of assessments, including a portfolio of professional work, and passing examinations of subject matter and teaching skills are required to earn Board Certification. A recent study by researchers at the University of North Carolina at Greensboro provided evidence that Board Certified teachers scored higher on measures of teaching expertise, and that their students showed greater understanding of what was being taught, as measured by samples of student work.

Twenty-four states and 85 districts recognize National Board Certification as a proxy for high quality teaching. Many attach financial rewards. Several make it possible for Board Certified teachers to take on new roles, such as mentoring new teachers.

Business leaders have provided support for Board Certification candidates. The Bank of America, for example, sponsors Exemplary Teachers for Arizona. In collaboration with Arizona State University and the Arizona Education Association, this program recruits and supports, with money and mentoring, approximately 50 teachers per year for National Board Certification. State Farm Insurance is investing two million dollars in support programs for teachers seeking National Board Certification. And the Public School Forum of North Carolina, a coalition representing business leaders, educators, and policymakers, successfully lobbied the state legislature for pay incentives for teachers who receive National Board Certification.

Not all teachers will choose to earn Board Certification. But we must expand the opportunities for those who choose to participate in the process. We should strive for a situation in which every school has a complement of these highly accomplished teachers. And we should target our first efforts at ensuring that low-performing schools have a critical mass of these expert professionals.

State-Funded Incentives for National Board Certification

Below is a sample of state-funded salary increases for National Board Certified teachers.

- Florida pays for a ten percent salary increase plus an additional ten percent for National Board Certified teachers who mentor other candidates.
- The state of Washington provides a 15 percent salary increase.
- North Carolina pays the $2,300 certification fee up front and provides a 12 percent annual increase to teachers who become National Board Certified.
- California pays National Board Certified teachers a one-time bonus of $10,000 and an additional $20,000 to those who agree to teach for four years in a low-performing school.
- South Carolina pays National Board Certified teachers an additional $7,000 per year, beyond their regular salaries, for ten years.

For more information, please contact the National Board for Professional Teaching Standards at (703) 465-2715 or www.nbpts.org.

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"We must 'invest more, expect more' in public education."

— Governor Michael Leavitt, Utah

A NEW MODEL OF PAY TIED TO PERFORMANCE AND A NEW EMPLOYMENT COMPACT

High expectations for performance, high salaries, and varied career responsibilities mark professions. We must take positive steps to reconfigure career options and opportunities so that those available to teachers are more consistent with those other professions enjoy.

Teachers should know what is expected of them in terms of outcomes. High quality work, which results in meeting performance expectations, should command commensurately high salaries. Opportunities for advancement *within teaching* should be widely available. And the basic tenets that undergird teachers' professional relationships with their districts should be embedded in a new employment compact.

Expanded Career Opportunities

Teaching is a static career. A well-used expression finds its home in truth: "If you're a teacher, you must move out to move up." Administration offers career options. Teaching typically does not.

The lack of options within teaching serves as a barrier to recruitment. In a recent survey, 70 percent of recent college graduates reported that they do not believe teachers have adequate opportunities for advancement (Farkas, Johnson, and Foleno, 2000). And it is a barrier to retention when teachers know that after 20 years on the job, their professional responsibilities will be nearly identical to those after two years on the job.

If we hope to attract and retain adequate numbers of high quality teachers, we must expand the range of teachers' job-related possibilities.

- ***Expand teachers' career opportunities by expanding professional roles through differentiated staffing and career ladders.***

Teaching ought to be a profession with progressive career steps. We must create career ladders that provide added responsibility, and added pay, for those teachers who assume new teaching roles. Experienced teachers deserve the opportunity to serve as mentors for new teachers; leaders of school-based strategic planning teams; peer assessors; professional development providers; researchers; coaches for teachers preparing for National Board Certification; software developers;

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The Horizon Community Learning Center and the Milken Family Foundation

Horizon Community Learning Center is a charter public school providing continuous education to 1140 students from kindergarten through twelfth grade, serving the Ahwatukee, Foothills, Chandler, Guadalupe, Mesa, and Tempe communities in Arizona.

Horizon has restructured teachers' roles through implementation of multiple career paths, market-driven compensation and ongoing professional development. Horizon teachers have formed committees to develop performance based appraisal systems and incorporate various other endorsements (technology, curriculum integration, etc.). This is truly a program for teachers, by teachers.

As a result, Horizon is able to attract top teachers. Horizon is honored to have two teachers applying for National Board Certification and has successfully recruited former Department Chairs from high schools and colleges. In addition, several teachers have given up their tenure at other districts to become part of Horizon.

Currently, Horizon is working with the Milken Family Foundation to implement Milken's Teacher Advancement Program (TAP). TAP is based on five key principles:

- **Multiple Career Paths** from Associate Teacher to Cluster Leader. TAP offers all teachers the opportunity to advance in the profession without having to leave the classroom.
- **Market-Driven Compensation** that bases pay on demand, demonstrated teacher knowledge and skills, actual teacher performance, increased responsibilities, and student performance.
- **Performance-Based Accountability** that assesses teachers against high standards in content knowledge, planning, instruction, assessment, and in producing student learning gains.
- **Ongoing, Applied Professional Growth Activities** that occur at the school site during frequent professional growth blocks led by the principal and Cluster Leaders (master teachers) are designed to encourage more collaboration among professional staff. A mandated salaried, mentored induction year gives new teachers classroom responsibility with intensive support; and
- **Expanded Supply of High Quality Teachers** through making the initial academic degree and teaching certification attainable in four years, providing alternative certification opportunities, allowing outstanding retired teachers to continue working on a part-time basis, expanding teacher job mobility through multi-state credentialing and private pension plans, and giving teachers the opportunity to become nationally certified at the beginning, middle and advanced levels of professional practice.

For more information on the Horizon Community Learning Center please contact Christine Emmons at (480) 659-3000 or visit www.horizondc.org.

For more information on the Milken Family Foundation Teacher Advancement Program please contact the Milken Family Foundation at (310) 998-2800 or visit www.mff.org.

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evaluators, and trainers, and adjunct university faculty in teacher education programs. And options ought to be structured so that teachers can select from among a range that might require fulltime or part-time classroom release for a period of time, or that do not require teachers to leave their classrooms at all.

Excellent classroom teaching ought to carry its own rewards. No teacher should be required to assume additional out-of-classroom responsibilities. But opportunities for different teaching-related options that do not require individuals to leave the profession or become administrators should be available for those who seek them.

Expanded career options serve a dual purpose. They provide added incentives for teachers to remain in teaching, and they offer opportunities for schools and districts to use teacher expertise in new and varied ways.

Increased Pay Tied to Performance

"We will never really improve American education until we elevate the teaching profession and come to grips with the issue of teacher compensation."

— Former U.S. Secretary of Education Richard Riley
State of American Education Address, February 2000

Professional pay structures reward accomplishment and achievement. Teachers currently earn added salary for longevity and accrued course and college units that often have little relationship to their professional practice. This pay structure depresses salary levels and fails to reward teachers for their contributions to student learning. To attract and retain high quality teachers, we must substantially increase teacher pay and institute a new compensation structure based on increased professional roles and demonstrated performance.

- *Increase salaries and tie pay to performance, including pay for knowledge and skills and pay for student achievement results.*

The numbers speak for themselves: beginning teachers aged 22-28 earn an average of nearly $8,000 less than other college-educated adults (Education Week, 2000). Teachers not only begin with lower salaries than other professionals, they have lower potential lifetime earnings even if they earn advanced degrees. Teachers ages 44-50 earn approximately $23,000 less than their counterparts in other occupations. As *Education Week*'s "Quality Counts 2000" reported, "While the prosperity train raced across the nation in the latter half of the 1990s, teachers [were] left standing at the station."

We must increase teacher salaries to a competitive level commensurate with their status as professionals and the essential contribution of their work and consistent with the new requirements

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"Experts recognize that teaching is the most important factor in improving student achievement, and today's teachers face more challenges than ever before. When implemented with other reforms that support quality teaching, pay-for-performance can be an invaluable tool for recruiting and retaining teachers, improving their abilities, and, most importantly, increasing student achievement."

— Edward B. Rust, Jr., Chairman and CEO, State Farm Insurance Companies
Chair, The Business Roundtable Education Task Force
Immediate Past Chair, National Alliance of Business

and expectations we have of them. But raising salaries alone is not the answer.

We must also institute pay-for-performance incentives, including pay for knowledge and skills and added pay for improved student achievement. Let us be clear: This is not a call to return to the failed merit pay programs of the past. Those programs reinforced a culture of professional isolation, granted "merit" raises on the basis of subjective and often unclear standards, and were available to only a few teachers. What we promote here is a new system with clear objectives and expectations, broad opportunities for all teachers to earn added compensation, and demonstrable results.

Teachers need to know more about their subjects and more about how to teach those subjects to students. And they need new skills—in technology, school-based leadership, and curriculum design. Teachers' compensation structures should reflect added financial benefit to those who improve their knowledge and skills in ways that directly impact student learning. Improving knowledge and skills is just one component of a professional salary structure for teachers. Financial incentives must also be provided for teachers whose students demonstrate achievement gains.

The Denver Pay-for-Performance Pilot

Denver Public Schools and the Denver Classroom Teachers Association are in the second year of a four-year pilot to determine how pay-for-performance helps improve student achievement. Participating teachers can earn bonuses of up to $1,500. The program involves three pay-for performance approaches: 1) pre-/post-test administration of the Iowa Test of Basic Skills to measure student learning growth; 2) assessing student growth by classroom- and standards-based measures such as criterion referenced tests, portfolios, and projects; and 3) increasing student performance by increasing teacher knowledge and skill.

For more information, please contact Bruce Dickinson, Executive Director, Denver Classroom Teachers Association, (303) 831-0590 or Brddu@aol.com or Johnny Lydia, Larry Lindauer, or John Leslie, Denver Public Schools, (303) 764-3200.

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We believe that teachers should receive bonuses based on school, grade, and individual performance. These rewards would reflect individual teachers' impact on student achievement as well as class, grade and school effort and improvement. Bonuses should acknowledge that increasing student outcomes is a collaborative activity, requiring collective effort. Rewards should be based on measurable indicators of student achievement, including standardized test scores, standards based examinations, and other gauges of student progress. We underscore that if schools are to provide such bonuses, particularly for individual performance, our systems designed to measure student achievement and individual teachers' contributions to student learning must be improved.

2000 Cincinnati Salary Schedule	
Apprentice	
Step 1	30,000
Step 2	30,000
Novice	
Step 1	32,000
Step 2	33,250
Step 3	34,500
Step 4	35,750
Career	
Step 1	38,750
Step 2	42,250
Step 3	45,750
Step 4	49,250
Advanced	
Step 1	52,500
Step 2	53,750
Step 3	55,000
Step 4	55,000
Accomplished	
Step 1	60,000
Step 2	61,250

The Cincinnati Plan

The Cincinnati pay plan, jointly developed by the Cincinnati Public Schools and the Cincinnati Federation of Teachers, severs the tie between pay and longevity or units. Scheduled to be implemented in 2002, the plan places teachers in one of five salary categories: Apprentice, Novice, Career, Advanced, and Accomplished. Advancement from one category to another is based on delineated performance expectations. The compensation schedule, pictured above, also provides for salary increments and bonuses for National Board Certification, Master's degrees in content areas, Ph.D.s, dual certification, and demonstration of selected skills such as curriculum development, technology, and leadership.

Teachers who do not advance from Apprentice to Novice after two years, or Novice to Career after five years, lose their jobs. Teachers may remain at the Career level for the duration of their professional lives or, based on evaluations and demonstrated knowledge and skills, may move to the Advanced and Accomplished levels.

For more information, please contact Rick Beck, President, Cincinnati Federation of Teachers, at (513) 475-6040 or rickbeck@fuse.net or Kathleen Ware, Associate Superintendent, Cincinnati Public Schools, at (513) 475-4802 or warekat@cps-k12.org.

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Team-Based Incentives in Columbus, Ohio

The Columbus public schools and the Columbus Education Association have implemented team-based incentives for improved student achievement.

Each school designates three goals, two based on measurable indicators of student achievement according to the state's proficiency standards and one along the lines, for example, of increasing student attendance, decreasing the drop-out rate, or increasing parental involvement.

Each teacher in a school that reaches its goals receives a $500 bonus. In the program's first year of operation, 1998-99, 60 of 140 schools were eligible for achievement bonuses.

For more information, please contact John Grossman, President, Columbus Education Association, at (614) 253-4731 or edugator@aol.com.

Some states and districts have begun to implement team-based reward programs. California, for example, offers teachers bonuses ranging from $5,000 to $25,000 for measured improvements in student achievement.

■ *Offer year-round options for teachers.*

No profession, other than teaching, expects its members to complete their work on a part-time schedule. In his year 2000 State of Education address, former U.S. Secretary of Education, Richard Riley called upon school districts to begin paying teachers on a year-round calendar. The reason: the demands that teachers face in helping all students reach high levels of academic achievement cannot be accommodated in a nine-month salaried year.

While it may not be necessary for all teachers to work year-round—and not all teachers will want to—we must move toward a system of flexible staffing in which teachers assume differentiated responsibilities on differentiated calendars and are compensated accordingly. In this way, teachers' career options can be further expanded and important work, such as aligning curriculum to standards, can be accomplished.

The Year-Round Contract in Hopkins, Minnesota

Hopkins, Minnesota, a district of 8,000 students, is implementing an 11-month teacher work year. The program, which is part of an agreement with the Hopkins Education Association, is voluntary and optional. Teachers can, on an individual basis, choose to participate. The district can determine how many teachers can take advantage of the new pay and work structure.

The Hopkins plan provides a starting salary of $35,000 for teachers with a Bachelor's degree and $42,500 for those with a Master's degree, substantially higher than for teachers with these same qualifications who are not on the 11-month calendar. Still in its developmental stage, the salary schedule, when completed, will include added longevity steps for teachers with B.A.s and Master's degrees. In addition, bonuses totaling 20 percent above the base salary will be added as incentives for yet-to-be-determined knowledge and skills.

For more information, please contact Dr. Michael Kremer, Superintendent, Hopkins Schools District, at (952) 988-4000 or michael_kremer@hopkins.k12.mn.us.

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■ *Offer pay incentives to teachers who teach in shortage areas and hard-to-staff and low-performing schools.*

One of the traditional "givens" of teacher compensation plans is that a teacher is a teacher is a teacher. Regardless of what they teach or where they teach, all are paid the same. When teachers in all fields and all kinds of schools are plentiful, this kind of equity makes sense. There is nothing inherently more valuable about a math teacher or an English teacher or a third grade teacher. But we now are faced with a situation in which categories of teachers—math and science teachers, teachers willing to teach in inner city schools—are in extremely short supply. To accommodate this circumstance, districts hire unqualified people or place out-of-field teachers in open positions. And students pay the price.

Research shows that one-third of all high school math teachers have neither a major nor a minor in math. Almost half of all students in physical science classes are taught by teachers without so much as a minor in any of the physical sciences. In high-poverty inner-city schools, it is not unusual to find that more than half the students are taught by teachers who have but a glancing background in the subjects they are teaching (Ingersoll, 1999).

Scholarships and Loans

New York State offers scholarships worth $3,400 per year for aspiring teachers who agree to teach in areas of geographic or subject area shortage. California's APLE (Assumption Program of Loans for Education) annually provides up to $11,000 in loan assumption benefits for each of 4,500 prospective teachers who agree to teach in designated shortage areas or in schools serving a high proportion of low-income students. Georgia's HOPE Teacher Scholarship offers cancelable loans of up to $10,000 for individuals preparing to teach in shortage fields.

Housing Incentives

Baltimore offers $5,000 toward closing costs on a home in the city and loans of up to $1,200 for relocation costs. The Department of Housing and Urban Development's "Teacher Next Door" program provides zero-down half-price loans to teachers in a number of cities. And the Bank of America provides zero-down home loans for teachers.

Salary Bonuses

El Paso, Texas pays $2,000 extra to math teachers. Arlington, Texas offers a $3,000 hiring bonus to math, science, and bilingual teachers. Massachusetts offers teachers an additional $20,000 over four years in exchange for their agreement to teach in a low-performing district in the state.

Tax Breaks

California has made the commitment to personal income tax credits for teachers. Under a new state law, teachers can claim credits ranging from $250 to $1,500, depending on their years of experience.

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Unlicensed lawyers are not allowed to practice law. We would not think of expecting a brain surgeon to perform open heart surgery. Likewise, our students deserve to have qualified teachers. In order to end the practice of misassigning teachers, we must invest in financial incentives to attract and retain teachers in shortage fields, and offer bonuses to teachers who assume the special challenge of teaching in low-performing schools. Scholarship and loan forgiveness programs, housing allowances, tax breaks, and salary bonuses for teachers in high demand should become part of the compensation mix.

Evaluation

Professionals expect to have their performance appraised on a regular basis. Evaluation of professional practice provides clear statements of expectations for professional performance, guideposts for continuous learning, procedures for remediating inadequate performance, and steps to be taken if performance does not improve to the expected level.

Teachers are entitled to evaluation systems that embody these attributes.

- *Develop evaluation systems that are credible, fair, based on standards of good teaching, and include evidence of student learning.*

Good teacher evaluation systems are based on clear standards of good teaching, include evidence of student learning, offer means and opportunity for teachers to shore up areas in which they need improvement, and include credible and fair procedures for removing ineffective teachers who cannot or do not improve. The evaluation systems used in most school districts come up short on nearly all of these dimensions (Koppich, 1998).

Peer Review in Rochester, New York

Rochester, New York is among a handful of districts that has pioneered teacher evaluation through peer assistance and review in a program that is a collaborative effort of the district and the Rochester Teachers Association.

The Mentor/Intern component is a year-long induction in which accomplished teachers (mentors) are released part-time from their classrooms to support and evaluate beginning teachers (interns). Mentors' assessments are guided by the district's Professional Expectations for Teachers which parallel the work of the National Board for Professional Teaching Standards. While each year about seven percent of interns are not recommended for rehiring, peer review is credited with increasing teacher retention rates from 65 percent when the program began to 87 percent today.

Intervention operates for experienced teachers who have received unsatisfactory evaluations. The goal is to improve teaching through intensive support. The result: improvement or dismissal. Most teachers improve. Ten percent of intervention cases for experienced teachers result in dismissal, resignation, or retirement.

For more information, please contact Adam Urbanski, President, Rochester Teachers Association, at (716) 546-2681 or urbanski@servtech.com or Clifford Janey, Superintendent, Rochester City Schools, at (716) 262-8378 or janey@rochesterk12.nyus.

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Districts and states must develop teacher evaluation plans that provide standards-based assessments of teacher performance as well as clear direction to assist teachers to improve their practice. Wherever possible, the evaluator should be someone who is familiar with the teacher's subject matter, so as to offer concrete guidance to improve practice.

If professional advancement is to be premised on evaluation of professional practice, and financial incentives are to be tied to appraisal of professional work, then these evaluation systems must be credible, fair, and professionally sound.

Performance-Based Evaluation in Baltimore

As part of Baltimore's Performance-Based Evaluation System, Baltimore teachers are required to submit a Demonstrated Student Achievement Portfolio. Portfolio entries must demonstrate that planning and teaching:

- is derived from content standards, course curricula, Maryland Learning Outcomes, and Core Learning Goals;
- is substantive and rigorous;
- addresses skills that are developed during the entire course or school year;
- can be applied to every student in the class; and
- can be documented with both samples of student work and assessments.

Teachers are required to use the portfolio to document, a) the progress of six students toward the achievement of two to four instructional goals; b) the teacher's efforts to improve attendance; and c) the teacher's efforts to interact with parents. Portfolios are regularly reviewed throughout the year and used as a tool to improve teaching practice.

For more information, please contact Dale Aberle, Marcia Brown, or Lynda Nusinov, Baltimore Public School System, at (410) 545-1870.

A New Employment Compact

As professionals, teachers ought to know what is expected of them in terms of performance, the basis on which compensation will be awarded, the opportunities available for continuing professional improvement, the standards on which their professional practice will be evaluated, and the conditions that can lead to promotion, demotion, or dismissal. This requires moving beyond traditional tenure, acknowledging and respecting teachers' fundamental role in improving student achievement, and ensuring that teachers are buffered from capricious decisions that do not reflect accurately on their professional contributions.

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What is called for is a new agreement—an employment compact—that embodies expectations of teachers as well as supports and incentives that will be available *for* them. This agreement would include time-specific provisions and would recognize that performance carries mutual obligations: teachers continue to upgrade their knowledge and skills and act in the service of improved student achievement, and school and district management provide the requisite resources and support that enable teachers to do their jobs effectively.

The Minneapolis Agreement

Much of the agreement between the Minneapolis Public Schools (MPS) and the Minneapolis Federation of Teachers (MFT) focuses the school system and teachers' work around an Accountability Framework. The framework specifies the obligations of each education stakeholder—the school board, central office staff, principals, teachers, and students and their families. Teachers' primary roles are increasing student achievement and continuous professional improvement.

During the first three years of their professional lives in Minneapolis, teachers are required to set challenging goals centered on student achievement and, with the support of a mentor, work toward achieving them. New teachers participate in individual and group professional development, have their teaching assessed by administrators and experienced teachers, and develop professional portfolios. At the end of the three years, a teacher-administrator review team determines whether to offer a continuing contract.

Thereafter, there is a heavy emphasis on professional development, with time and money devoted to it. Teacher professional learning centers on increasing subject matter knowledge and implementing the findings of research on effective teaching.

Evaluation is a continuous process, carried out by peers and administrators, and embedded as part of the professional development cycle. Teachers who are not meeting their professional obligations become part of an Intensive Assistance Process, participation in which leads either to improved professional practice or termination.

Opportunities for advancement are clearly spelled out and include options for teachers who earn National Board Certification and for those who assume school leadership roles.

The district and the MFT are currently at work designing a new compensation structure that includes pay-for-performance components.

For more information, please contact Louise Sundin, President, Minneapolis Federation of Teachers, at (612) 529-9621 or Lsundin@mft59.org or Carol Johnson, Superintendent, Minneapolis School System at (612) 668-0200 at mpssup@mpls.k-12.mn.us.

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■ *Clearly spell out performance expectations.*

Teachers need to know, in clear terms, precisely what they are expected to accomplish. Improving student achievement is the bottom line. Teachers' individual and team efforts must be based on high quality practices that improve students' learning. That learning must be demonstrated by improved scores on standardized tests, better results on performance-based assessments, and higher quality classroom work. But teachers must know up front what they are being asked to do and how they, and the system, will know expectations and goals are being met or falling short.

■ *Articulate the basis of and processes for awarding base compensation and bonuses.*

The compact should describe how teachers will be paid, the means by which salaries will be linked to performance, and the type of rewards and bonuses teachers can expect for exceeding performance expectations. It should also specify how teachers can advance within the profession through differentiated staffing and accompanying pay increases.

■ *Affirm the need for professional improvement.*

The compact should include provisions on professional development opportunities, including time for teachers to plan, reflect, and work with colleagues. It should spell out clear expectations of and opportunities for continuous improvement.

■ *Specify the basis by which teachers will be evaluated.*

The compact should include the basis by which teachers' performance will be evaluated. Clear standards and procedures must be part of the agreement, as well as the means by which teachers will be apprised of areas of needed improvement and opportunities for doing so. Appropriate intervention methods for teachers who do not meet performance goals should also be described.

■ *Specify the conditions for promotion, demotion, and dismissal.*

Teachers need to know the standards and means by which they can: 1) advance in the profession through expanded career opportunities; 2) be removed from beyond-the-classroom professional positions; and 3) lose their teaching positions. Procedures must embody due process, but must not be so cumbersome as to impede action.

Some districts are beginning to consider agreements much like the employment compact. Minneapolis' teacher contract, for example, embodies many of the compact elements.

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Environment

A NEW SCHOOL ENVIRONMENT THAT PROVIDES TEACHERS WITH THE FREEDOM AND FLEXIBILITY TO ACHIEVE RESULTS

A professional environment respects professionals' expertise. It equips professionals with the tools they need to do their jobs effectively. And it provides multiple ways for professionals to exercise judgment and leadership.

Standards-based education aims to transform an input-based system in which "success" is measured by numbers of things—dollars, teachers, books—to a performance-driven system in which outcomes are what count. In such a system, flexibility is key. Schools must have the flexibility to use resources and personnel in ways that advance student achievement goals. This is the rationale behind the charter school movement. If teachers are to be full partners in creating successful, outcome-oriented schools, they must have the flexibility to use their expertise to make instructional and other professional decisions to help students meet standards. The bottom line is simple—decisions must be based on plans, strategies, and ideas that improve student achievement.

In addition, teachers must have access to the information and resources their jobs demand. And we must make it possible for teachers to match their knowledge and skills to available jobs.

■ *Decentralize authority to give teachers the flexibility to design instructional programs according to students' needs.*

Each school is different. Yet schools are standardized.

Research shows that successful organizations involve employees in making decisions about how to organize and conduct their work (Odden, n.d.). Matters such as class size (sometimes a large class is optimum; sometimes a small class is better), length of instructional periods (sometimes 30 minutes may be enough; sometimes two hours are needed), and the way in which students and teachers are assigned to classes are decisions better made at schools than by district headquarters.

School-based decision-making provides

Azalea Elementary School, Pinellas County

Using the Baldrige Criteria, Azalea Elementary School has realized enormous gains in student achievement by restructuring the school environment to empower teachers to help all students achieve. Working in teams, teachers set achievement goals for each grade. For example, children exiting second grade must perform at or above grade level based on state performance requirements in reading, writing, and math.

In 1998, in response to kindergarten students who did not meet established standards, first grade teachers developed a plan that included one-on-one assistance for students who needed it. Special training was also provided for teacher assistants.

The results are impressive. Reading and writing levels moved from no students ready for first grade to 100 percent at or above grade level by the time they were ready to enter second grade less than a year later.

For more information, please contact Sue Boyd or Dora Feck, Azalea Elementary School, (727) 893-2187 or feckd@pinellas.k12.us.

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teachers and principals with the opportunity to rethink conventional practice, such as assigning 30 students to a single teacher for a full day in elementary schools, or having class periods of the same length everyday in high schools. Moving instructional decisions to schools also creates opportunities for teachers to organize instruction in ways designed to provide added collegial support as they adapt to students' changing learning needs.

School-based autonomy in professional decision making does not mean a system of "do your own thing" schools. Teaching professionals must make decisions bounded by professional norms of good practice—what is right for students.

The point is this: while states and districts should establish *what* is expected by way of student outcomes, schools must be free to determine *how* they achieve those results.

■ *Decentralize budget decisions.*

Most important decisions about how education money is spent are made before a dollar ever reaches a school or classroom. If schools are to be held accountable for meeting student standards, they must have the flexibility to allocate dollars based on their assessment of student learning needs. This apportionment of funds cannot be accomplished by remote control from a district central office.

Professionals in the schools—teachers and principals—must have the freedom and authority to dedicate dollars as they see fit to students' instructional needs. We must, in other words, connect budget decisions with the core of teaching and learning. The "test" of the wisdom of schools' decisions will come in the form of student achievement results.

Decentralizing Budgets in Seattle

The Seattle school district and Seattle Education Association have developed and implemented a far-reaching program to decentralize budget decisions. Not only is the vast majority of dollars moved to school sites, but the amount of money each school receives is based on students' instructional needs. In other words, some schools receive more money that others, regardless of the number of students. Student needs are determined on the basis of focused, school-based data gathering systems that assess students' learning requirements.

The district and union developed a "budget builder" software package to help teachers and principals polish the necessary skills and take the mystery and drudgery out of budget development. School budgets are available for parents and others to view so they have a clear understanding of how schools' dollars are being spent.

A conscious purpose of moving budget decisions to schools is to build visible ties among dollars, student achievement, and professional development. (Professional development flows from student learning needs.) A permanent union-management committee is charged with continuous oversight of the budget process and is responsible for evaluating its effects.

For more information, please contact John Dunn, President, Seattle Education Association, at (206) 203-8443 or jdunn@wea.nea.org or Joseph Olchefske, Superintendent, Seattle Public Schools, at (206) 298-7100 or jolchefske@seattleschools.org.

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■ *Decentralize personnel decisions.*

It is time to eliminate seniority as a principal criterion in teacher assignment. And it is time to allow schools to make their own personnel decisions.

Ensuring that teachers and administrators are a good "fit" with a school's style, personality, and program is essential to creating a team that can develop a strategic plan to improve student achievement. Establishing mandatory selection criteria, beyond basic certification requirements, handcuffs professionals as they try to match need with availability. If we are to hold schools accountable for student achievement results, we must give them the flexibility to make decisions about the professionals who can make the greatest contribution to student learning at that site. Staffing decisions ought to focus on obtaining student achievement results. This is particularly crucial in schools that serve poor and minority children, which often are assigned the least prepared teachers.

School-Based Personnel Decisions in New York City

New York City schools and the United Federation of Teachers have developed a school-based plan for staffing and transfer. A committee, composed of a majority of teachers and the principal, selects teachers to fill available positions. Selection is based on the school's needs and the applicant teacher's educational qualifications and fit with the school program. Seniority comes into play only when the school team concludes that two or more teachers have equal qualifications.

For principal selection, schools establish committees, composed of parents and teachers, to interview applicants. The top three applicants are recommended to the district central administration which makes the final selection.

For more information, please contact Randi Weingarten, President, United Federation of Teachers, at (212) 598-9253.

■ *Provide teachers with the resources their status as professionals requires.*

Professionals are provided with the tools they need to do their jobs. Tools include tangible resources, such as telephones, office space, and technology, as well as intangibles, such as access to job-related research and information. Too often, teachers are frustrated by a lack of basic office materials, a mountain of bureaucratic paperwork, and no money with which to purchase necessary supplies for their classrooms. Teachers must be accorded the materials they need to perform their jobs.

Teachers also should have space away from their classrooms in which to work. They should have access to phones and computer equipment. They should be kept regularly apprised of the latest in student standards, assessment procedures, and expected outcomes because, hard as it is to believe, teachers are often the last to know when standards are revised or assessments change.

We must increase the visibility and use of web-based information that can enhance teachers' professional lives. The American Federation of Teachers and Teachscape, a research-based professional development system, for example, have formed a strategic alliance to create technology-based professional development programs for teachers. A library of video case studies of exemplary teaching in literacy, math, science, and social studies, aligned with state and local standards, will be supplemented by online and school-based mentors. Teachers should have access to resources of this sort.

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Professionals keep current on the latest research in their field. We must develop a regular pipeline —through district- or school-based "research teachers" or information provided by colleges, universities, or education research centers—by which teachers are kept abreast of new research findings that can contribute to more effective teaching.

Teachers cannot do their jobs with one hand tied behind their backs. They must have the basic tools that are requisite to their jobs.

■ *Make teaching licenses portable so teachers can move freely from one state to another.*

Teachers are effectively captives of the state in which they earn their licenses. A successful English teacher from Massachusetts may not be considered qualified to teach English in Colorado. What qualifies a teacher to teach 4th grade in Maryland may not qualify that teacher to teach 4th grade in Connecticut. Each state sets its own licensing standards and those of one state are not necessarily compatible with those of another. The result: fewer than 10 percent of all school system hires are transfers from out-of-state (NCES, 1996). And opportunities to draw from the reserve pool—individuals who prepared to teach but are not doing so—are severely constricted.

The current licensing system impedes teacher mobility and exacerbates teacher shortages. We must establish a system of portable licenses that embodies high standards and allows teachers to go where the jobs are.

The Mid-Atlantic Regional Teachers Project

Working with the Council for Basic Education, Delaware, Maryland, Virginia, Pennsylvania, and the District of Columbia are working together toward shared higher standards for teachers while aggressively addressing supply needs. A crucial portion of this project will be exploring the feasibility of multi-state credentialing and portable pensions.

For more information, please contact Susannah Patton, Council for Basic Education, at (202) 347-4171 or spatton@c-b-e.org.

■ *Increase teacher mobility with portable retirement benefits.*

Teacher pensions, like credentials, are creatures of states. A teacher who accepts a job in a new state starts over in a different retirement system. The new system may—or may not—offer the

Using National Board Certification to Create Credential Portability

Some states have begun to tackle the credential portability issue by using National Board Certification as a proxy for state licensing. Arizona, California, Colorado, Florida, Georgia, Iowa, Kentucky, Michigan, Montana, North Carolina, Oklahoma, Oregon, Rhode Island, and South Carolina automatically allow any National Board Certified teacher to teach in their state, regardless of the state that issued the teacher's license.

For more information, please contact the National Board for Professional Teaching Standards at (703) 465-2715 or www.nbpts.org.

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same benefits. And the move may jeopardize benefits already accrued. Suffice it to say pensions are a barrier to teacher mobility. It is time to establish a nationwide teacher retirement benefit system.

TIAA-CREF pioneered retirement plans for faculty in private colleges and universities and employees in non-profit organizations. Members participate regardless of the geographic location of their jobs. We should develop a similar plan for teachers.

■ *Invest in a nationwide recruitment clearinghouse for teachers.*

Teachers are in a sellers' market. Yet most districts approach recruitment as if they have no competition for teachers and teachers have no options for jobs.

Teachers must be able to operate in a national, not a local, market. Technology is an enormous boon here. The Internet offers a perfect venue for districts to advertise openings and provide applications. Initial screening can be done online. Interviewing can take place via videoconference. The New Haven school district in California, for example, arranges for prospective teachers to interview by videoconference at their local Kinko's.

Improving Teacher Recruitment

National Efforts: *Education Week*'s Online Job Bank and Recruiting New Teachers' Job Portal

Education Week, the widely read weekly education newspaper, has recently launched a national online job bank. School districts can post vacancies that teachers can search by geographic region, subject area, and grade level. The service also allows teachers to post resumes for districts to review. *For more information, please contact Anthony Rebora, Education Week, at (301) 280-3100 or arebora@epe.org or visit www.edweek.org.*

Recruiting New Teachers, a Massachusetts-based organization, has established a web portal to job banks in various states. Teachers can access sites with job descriptions, and school districts can access sites with teacher resumes. The clearinghouse also features advice on how to find a job, information on induction programs, and guidance on how licensed teachers can move to other states. *For more information, please contact Jim Raynor, Recruiting New Teachers, at (617) 489-6000 or jraynor@rnt.org or visit www.rnt.org.*

State Effort: CalTeach

The California Center for Teaching Careers (CalTeach) was established in 1997 to recruit qualified individuals into teaching. CalTeach is a one-stop online information, referral, and recruitment center which posts job opportunities for teachers and helps districts find qualified job applicants. Supported by contributions from Starbucks Coffee, Borders Books, and Barnes and Noble, CalTeach also assists interested individuals in finding teacher preparation programs and financial aid. *For more information, please call (888) 225-8322, email calteach@calteach.com, or visit www.calteach.com.*

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Improving Teacher Recruitment (continued)

Local Effort: The Chicago Teacher Recruitment Initiative

The Chicago Teacher Recruitment Initiative is a collaborative effort of the Chicago Public Schools, the business community, and other Chicago organizations. The goal is to interest new college graduates in teaching in Chicago. The Initiative offers web-based applications, a one-stop center for information about elementary and secondary schools, a help desk to track the hiring process, and mentoring and support services in the schools. *For more information, please call (312) 697-0038.*

The teacher shortage is in part a problem of distribution. Providing teachers with information about job openings and districts with information about available teachers can go a long way toward ensuring qualified teachers in every classroom.

■ ***Ensure that school boards, superintendents, and principals take it as their responsibility to create a supportive environment for teaching and learning.***

School boards, superintendents, and principals have important roles to play in creating a supportive environment for teachers. Effective school boards take responsibility for creating policies that support teachers. Successful superintendents make professional development a priority. Strong principals support teachers in helping students achieve.

By creating a supportive environment for teaching and learning—providing teachers with resources, keeping them up-to-date on relevant information, making sure that, to the extent possible, they are freed from extraneous paperwork—school boards and school and district administrators lay the groundwork for a teaching and learning environment that assists teachers to improve student achievement.

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Conclusion

> "We must raise standards, compensation, and status so that our best and brightest kids choose to enter the teaching profession, and so teachers who can't meet the standards choose to enter less demanding work."
>
> **— Hugh L. McColl**
> **Chairman and CEO, Bank of America**

A CALL TO CHANGE

This paper lays out a comprehensive strategy for elevating teaching to a profession. Many states and communities have already implemented pieces of this agenda. However, to truly elevate teaching to a profession, we must tackle all of the components we mention here. This paper specifically, and consciously, has focused on teaching. The reason: improving student achievement depends on our teachers. Business leaders believe that investing in teachers, increasing their professional capacity, will pay dividends that far exceed those investments.

We understand that this vision of the teaching profession will require substantial new investments as well as tough decisions about existing school resources. In communities all across this country, people have made the commitments necessary to implement each of the ideas we propose. We will work with district and school leaders to review and help reprioritize budgets and with state leaders to find new funding sources for these changes. And we make these recommendations in recognition of the enormous impact technology will have on education over the next ten years.

> "Our public schools are the gateway to our children's futures. As a former teacher, I know it is the teacher in the classroom who inspires our children to learn and succeed. That is why we must support our teachers. That is also why we must demand excellence."
>
> **— Governor Jeanne Shaheen, New Hampshire**

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Change is never easy and rarely cost-free. Business leaders recognize that the agenda we propose for teaching quality is significant and will take the better part of this decade to accomplish. We have long been committed to higher standards and improved accountability in education. We are now ready to work just as hard, for however long it takes, to implement the agenda we have outlined here.

We commit to this difficult work because we believe so strongly that it will pay huge dividends for American students. Our conviction is that every child needs a great teacher. We believe this agenda will move us to that goal.

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Appendix

INCREASED STATE SPENDING TO SUPPORT TEACHERS

Many states and communities have recently taken steps to increase investments in teachers. For instance:

- Alabama pledged to raise teacher salaries to the national average by locking in a portion of the growth of the Education Trust Fund. Sixty-two percent of the Fund's growth will be dedicated to teacher raises and benefits.
- Arizona, through Proposition 301 enacted in November 2000, increased the five percent sales tax by 0.6 percent for the next 20 years in order to increase funding for education. Included in this increase is money for higher teacher salaries.
- California increased its education budget by nearly 22 percent in July 2000. $1.84 billion of the budget was earmarked as discretionary funding for districts that experienced funding cuts in the early 90s; much of this funding is expected to go towards teacher salary raises. An additional $1.1 billion was targeted to a 3.17 percent cost-of-living increase for teachers. In addition, the state appropriated $55 million to raise the minimum salary for beginning teachers to $34,000 and $677 million to teachers and schools that meet state-designated performance goals.
- Delaware appropriated $2 million for professional development and "skills and knowledge" supplements. As a result of the increase for education, analysts estimate that 67 school districts will be able boost teacher salaries by an average of 6 percent statewide, the largest increase in more than 10 years.
- Idaho's most recent budget increased state reimbursements for school employee salaries from $692.6 million to $732.5 million.
- Kansas enacted a program to provide experienced teachers with a $1,000 annual stipend in exchange for serving as mentors.
- Minnesota increased state aid to education by $161 million. $34 million of this increase will be used for teacher professional development.
- Mississippi has embarked on a five-year plan to raise teacher salaries beginning in 2002, with the goal of bringing the average salary to $41,000 by 2005, representing a significant raise for teachers in that state.

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- New Mexico's final budget awarded an additional $93 million to K-12 education, making possible a 6.25 percent teacher pay raise.
- New York's final budget appropriated $25 million for the new Teachers for Tomorrow Program, which aims to actively recruit teachers for New York State schools. As part of this program, the Teacher Recruitment Tuition Reimbursement Program pays tuition for teachers in training in exchange for their commitment to teach in shortage areas after graduation.
- North Carolina appropriated money for $1,500 bonuses to be awarded to employees in schools that meet or exceed expectations on state tests. $230 million was allocated to continue to bring teacher salaries to the national average, including a 7.5 percent increase for FY 2000. That increases the state's average teacher salary to $36,441, only $4,000 below the national average.
- Oklahoma enacted a $3,000 across-the-board pay raise for teachers at a cost of $157 million.
- South Carolina voters approved a state lottery; some of the funds will pay for substantial college scholarships and free graduate level college courses for public school teachers.
- Texas tapped a $6.4 billion surplus in order to spend $1.7 billion on $3,000 pay raises for teachers, nurses, librarians, and counselors.
- Utah appropriated $4.4 million to teachers for school supplies. This amount translates to $225 for each elementary school teacher and $175 for each secondary school teacher.
- Virginia approved a referendum to earmark proceeds from the state's lottery to pay for education. The Governor has proposed using part of this money for teacher salary hikes.
- Washington voters approved a referendum that guarantees school district employees regular cost-of-living adjustments and the legislature also appropriated $5 million for raises for substitute teachers. Finally, voters approved Initiative 728 in November 2000, which directs a portion of annual surpluses from state property taxes to be used for education. Some of these funds will be used to raise teacher salaries.

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Resources

Resources for Business Leaders on Teaching:

Pay for Performance in Education: A Guide for Business Leaders

Investing in Teaching: A Common Agenda Statement

Investing in Teaching: An Action Guide

Investing in Teaching: Databook

Available from the Nations' Alliance of Business. Call 800-787-7788 to order or visit www.nab.com for more information.

Additional Resources on Teaching Available Through:

Achieve, Inc. (www.achieve.org)

American Federation of Teachers (www.aft.org)

Business Coalition for Education Reform (www.bcer.org)

Consortium for Policy Research in Education (www.wcer.wisc.edu/cpre/teachercomp/)

Council for Basic Education (www.c-b-e.org)

Education Commission of the States (www.ecs.org)

Educational Testing Service (www.ets.org)

Education Trust (www.edtrust.org)

Education Week (www.edweek.org)

The Thomas B. Fordham Foundation (www.edexcellence.net)

The Milken Family Foundation (www.mff.org)

National Board for Professional Teaching Standards (www.nbpts.org)

National Council for Accreditation of Teacher Education (www.ncate.org)

National Commission on Teaching and America's Future (www.tc.edu/nctaf)

National Education Association (www.nea.org)

Phi Delta Kappan (www.pdkintl.org)

Recruiting New Teachers (www.rnt.org)

Teacher Education Accreditation Council (www.teac.org)

Teacher Union Reform Network (TURN) (www.turnexchange.net)

U.S. Department of Education (www.ed.gov)

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THE BUSINESS ROUNDTABLE is an association of chief executive officers of leading corporations with a combined workforce of more than 10 million employees in the United States. The chief executives are committed to advocating public policies that foster vigorous economic growth; a dynamic global economy; and a well-trained and productive U.S. workforce essential for future competitiveness. Improving education performance in the United States is one of the chief executives' public policy priorities. For more information on The Business Roundtable, please visit **www.brt.org** or call **202-872-1260**.

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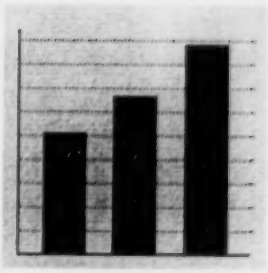
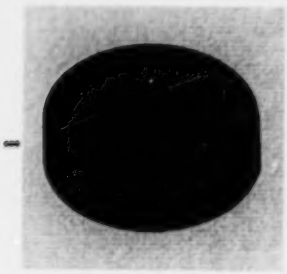
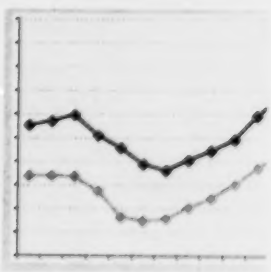
Investing in Teaching







DATABOOK

NATIONAL ALLIANCE OF BUSINESS

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Investing in Teaching

DATABOOK

Acknowledgements

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NATIONAL ALLIANCE OF BUSINESS

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THE NATIONAL ALLIANCE OF BUSINESS is a national business organization focused on increasing student achievement and improving the competitiveness of the workforce. Our 5,000 members include companies of all sizes and industries, their CEOs and senior executives, educators, and business-led coalitions.

The central purpose of the National Alliance of Business is to increase individuals' skills and knowledge mastery by working with employers, educators, training providers, coalitions, and policymakers to align the learning opportunities at all levels of the education and training system with the increasing demands of the Knowledge Economy.

To achieve this goal, NAB coalesces and leverages business leadership to:

1. Increase the academic achievement of every American child;
2. Ensure students have opportunities to experience and/or understand the linkage between academic success and success beyond school; and
3. Promote a demand-driven, competency-based workforce development system centered on life-long learning.

For more information on NAB, please visit **www.nab.com** or call **800-787-2848**.

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At the 1999 National Education Summit, business leaders, educators, and governors uniformly recognized that to improve public education, we must substantially increase investments in our teaching force. Therefore, business leaders wish to take the lead in drawing the nation's attention to the necessity and desirability of increasing our political, financial, and professional investments in an effort to drastically increase the support, respect, incentives, and accountability of the teaching profession.

For this reason, the National Alliance of Business, in partnership with other business organizations, has engaged in an intensive yearlong review of this issue. We are working closely with the foremost experts, educators, policymakers, and, in particular, business leaders, to determine what concrete investments and accountability measures are needed to revolutionize teaching.

As part of our *Teaching for Results* Campaign, the National Alliance of Business has compiled this Databook to serve as a comprehensive resource for facts and figures on teacher quality. This Databook presents extensive information on various issues related to teacher quality. And, it provides evidence in support of our campaign to increase investments and accountability for teachers through:

- **A New Model of Teacher Preparation and Professional Development**—Ensure that new teachers are better-prepared and experienced teachers have a clear mastery of new standards and the teaching strategies that can help students achieve;

- **A New Model of Pay Tied to Performance and a New Employment Compact**—Reaffirm the professional status of teachers by providing increased pay tied to performance, fair systems of evaluation, and a new employment compact; and,

- **A New Environment That Provides Teachers Both the Freedom and Flexibility to Achieve Results**—Within a standards-based system, provide teachers and schools with the decision-making freedom and flexibility to enable them to achieve higher student achievement results.

This Databook also serves as a supplement to the report *Investing in Teaching*. For more information, please visit our website at www.nab.com or contact the National Alliance of Business at **800-787-2848**. To obtain a copy of *Investing in Teaching*, please call **800-787-7788**.

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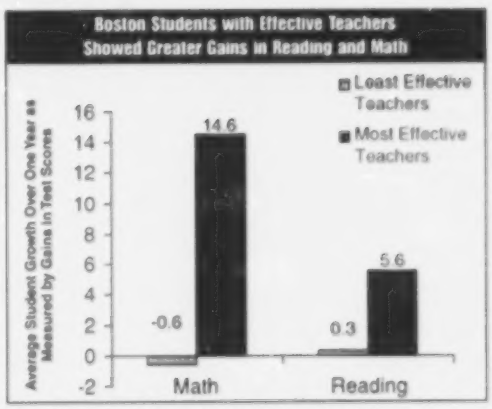
Preparation & Professional Development

Teacher Preparation and Professional Development

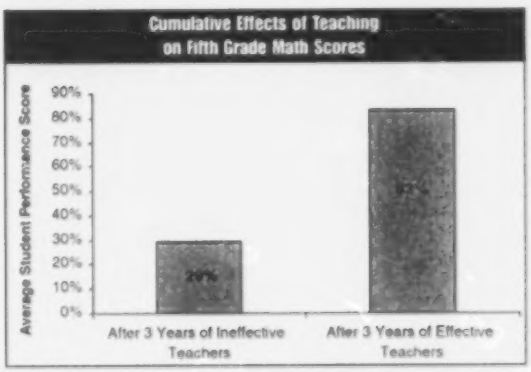
How Does Teacher Effectiveness Impact Student Achievement?

A qualified teaching force can have a dramatic effect on student achievement. For example, when the Boston Public Schools took students performing at similar levels and tracked their progress over one year, they found that certain teachers were better at achieving academic results. Students with effective teachers exhibited gains of 5.6 points in reading and 14.6 points in math, while students with ineffective teachers showed only a slight gain of 0.3 points in reading and actually lost 0.6 points in math.



Source: Boston Public Schools, High School Restructuring, 1998.

A study of a large Metropolitan school system in Tennessee found that effective and ineffective teachers have cumulative impacts on students' math scores.



Source: Sanders & Rivers, Cumulative and Residual Effects of Teachers on Future Student Academic Achievement, 1996.

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A study conducted in Dallas, Texas found that the scores of students who started out in the 60th percentile in reading and in math were drastically affected by whether students had been exposed to effective or ineffective teachers over a period of three years.

How Many Teachers Do We Need to Hire Over the Next 10 Years?

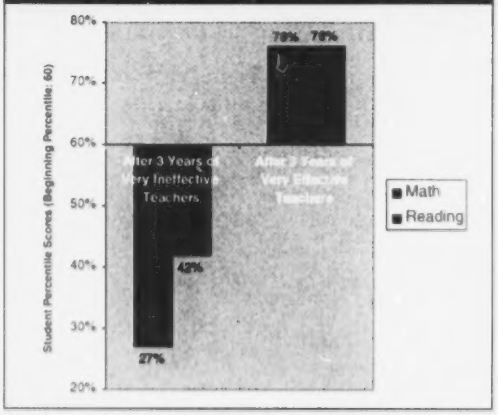
The nation's schools will need to hire an estimated **2.2 million public school teachers** (including both beginning teachers and those returning to the classroom) in the next decade to serve the growing enrollment of students and to fill a record number of vacancies as the first "baby boomers" begin to retire.

Source: U.S. Department of Education, *A Back to School Special Report on the Baby Boom Echo: No End in Sight*, 1999.

How Prepared Do Teachers Feel?

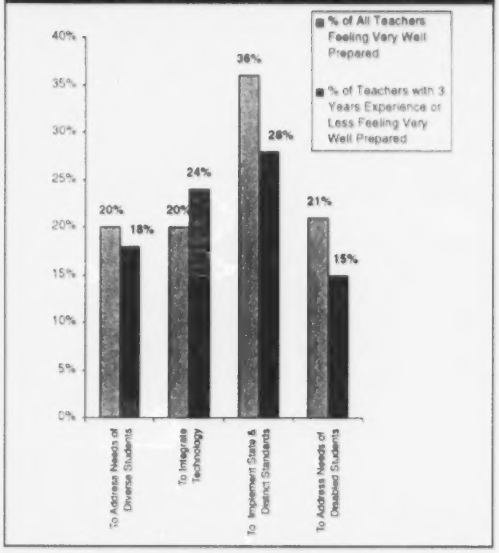
Most of today's teachers feel ill-prepared to address the needs of diverse students, integrate technology into the classroom, implement state and district standards, and address the needs of disabled students.

Cumulative Effects of Teaching on Fifth Grade Math and Sixth Grade Reading Scores: Dallas, Texas



Source: Jordan, Mendro & Weerasinghe, *Teacher Effects on Longitudinal Student Achievement*, 1997. Figure based on "Overhead 2" from *A Talented, Dedicated and Well-Prepared Teacher in Every Classroom: Information Kit*, U.S. Department of Education, September 2000.

Percent of Teachers Feeling "Very Well Prepared" to Perform Their Duties



Source: U.S. Department of Education, National Center for Education Statistics, *Teacher Quality: A Report on the Preparation and Qualification of Public School Teachers*, 1999.

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How Well-Qualified Are Teachers?

Teachers need to know well the subject(s) they teach. Yet, many teachers are instructing children in subjects in which they have no major.

Percent of Secondary Teachers With no Major in the Subject They Teach, By State and Subject

State	English	Math	Science	State	English	Math	Science
Alabama	25%	11%	27%	Montana	25%	23%	24%
Alaska	17	50	21	Nebraska	17	17	21
Arizona	35	39	27	Nevada	15	26	12
Arkansas	22	30	34	New Hampshire	10	24	9
California	24	50	38	New Jersey	13	31	18
Colorado	9	35	22	New Mexico	24	31	29
Connecticut	16	16	10	New York	11	16	15
Delaware	10	–	18	North Carolina	13	21	27
Florida	17	25	48	North Dakota	20	13	15
Georgia	18	18	32	Ohio	26	36	25
Hawaii	19	31	26	Oklahoma	22	26	38
Idaho	31	54	23	Oregon	39	39	7
Illinois	11	18	23	Pennsylvania	26	2	15
Indiana	24	20	22	Rhode Island	7	19	6
Iowa	20	26	14	South Carolina	22	28	26
Kansas	37	37	22	South Dakota	27	33	28
Kentucky	37	21	45	Tennessee	27	41	48
Louisiana	35	38	43	Texas	29	35	30
Maine	19	32	33	Utah	27	45	34
Maryland	15	27	15	Vermont	13	25	19
Massachusetts	11	24	11	Virginia	7	31	33
Michigan	33	39	27	Washington	36	51	17
Minnesota	17	6	3	West Virginia	26	21	24
Mississippi	34	28	27	Wisconsin	25	24	33
Missouri	19	11	30	Wyoming	25	22	20
				United States	**22**	**28**	**26**

–=No data provided

Source: U.S. Department of Education, National Center for Education Statistics, *SASS By State, 1993-94*, November 1996.

Research shows that one-third of all high school math teachers have neither a major nor a minor in math. Almost half of all students in physical science classes are taught by teachers without a major or a minor in any of the physical sciences. In many high-poverty inner-city schools, more than one-half of the students are taught by teachers with little background in the subjects they are teaching.

Source: Ingersoll, R. "The Problem of Underqualified Teachers in American Secondary Schools" *Educational Researcher*, 1999.

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Do Top Scorers on Standardized Tests Teach?

Research has found that students with high SAT/ACT scores are less likely to prepare to teach, less likely to actually teach, and less likely to stay in teaching.

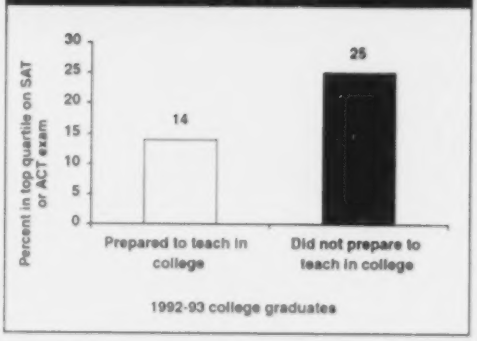
- Undergraduates who prepared to become teachers were less likely to score in the top 25 percent of individuals taking the SAT or ACT exams.
- Undergraduates who prepared to teach and actually taught were less likely to score in the top 25 percent of individuals taking the SAT or ACT exams than undergraduates that prepared to teach and did not teach.
- Undergraduates who remained in the teaching profession through 1997 were less likely to score in the top 25 percent of individuals taking the SAT or ACT exams than undergraduates who became teachers, then left by 1997.

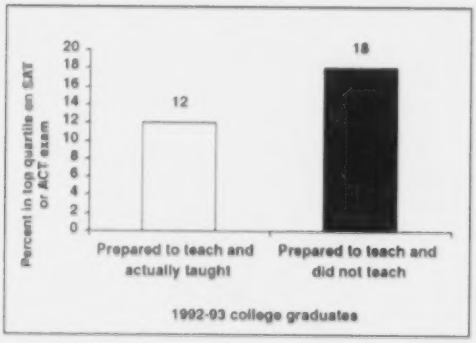
Source: Education Week, Quality Counts 2000

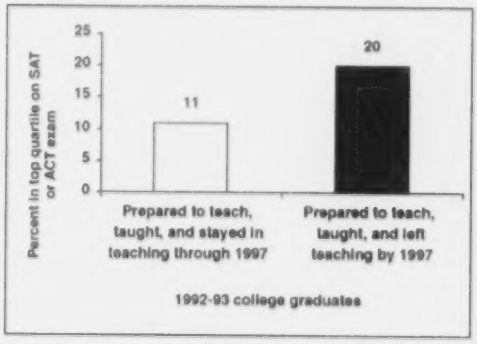
Teacher candidates who sought elementary education licenses had SAT and ACT scores **substantially lower** than the scores of those seeking licensure in specific content areas.

Source: Educational Leadership, May 1999

Teachers That Scored in the Top Quartile of Individuals Taking the SAT or ACT Exams







Source: Education Week, Quality Counts 2000

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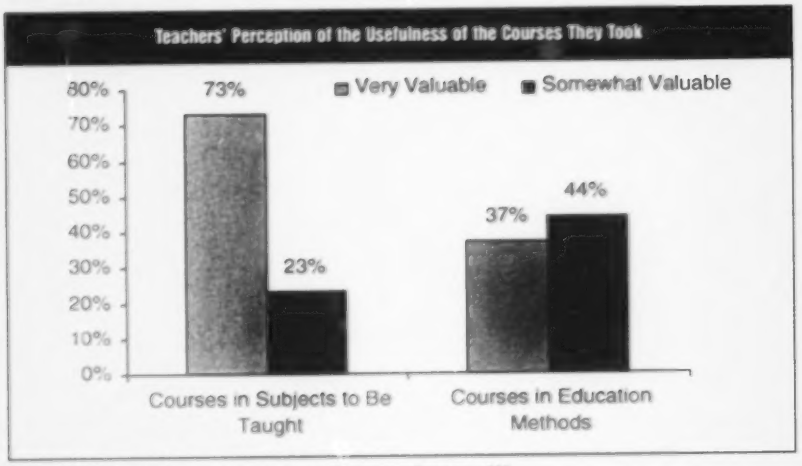
How Useful Do Teachers Find Subject-Based and Education Courses?

An overwhelming majority of teachers felt that courses taken in the subjects they were to teach were very valuable. Far fewer teachers rated their education methods courses so highly.



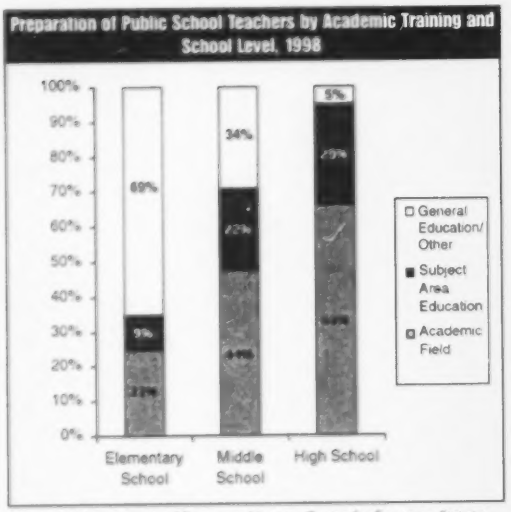
Source: National Center for Education Information, Congressional Testimony, 1999

How Prepared are Public School Teachers to Teach Their Subjects?

Less than 2/3 of high school teachers, a minority of middle school teachers, and only 22 percent of elementary teachers pursue a subject major.

Note:

- "Academic Field" refers to a major in an academic discipline, such as mathematics or science.
- "Subject Area Education" refers to a major in the teaching of an academic discipline, such as science education, rather than in the discipline itself.



Source: U.S. Department of Education, National Center for Education Statistics, The Condition of Education 2000.

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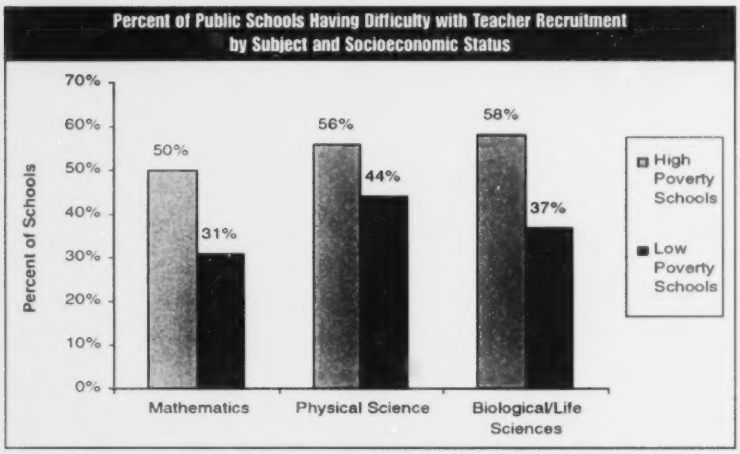
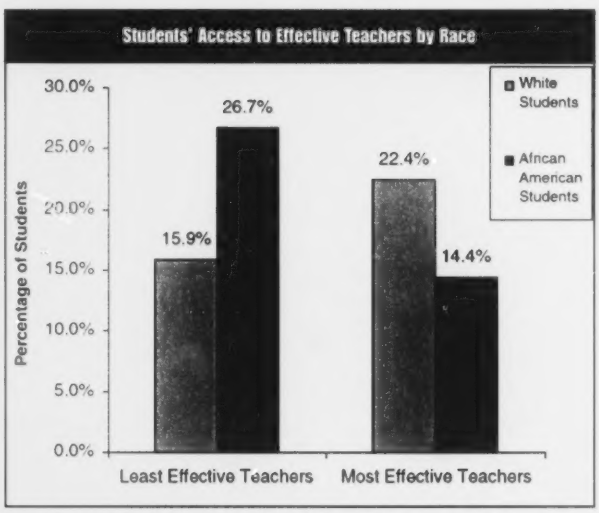
Recruiting Teachers to High Poverty Schools

High poverty schools have a more difficult time filling math and science vacancies than low poverty schools do.



Source: U.S. Department of Education, National Center for Education Statistics, *America's Teachers: Profile of a Profession, 1993-94*, July 1997.

A study of a large metropolitan school system in Tennessee found that African-American students are less likely to have access to the most effective teachers as reflected by those teachers' impact on student achievement.



Source: Sanders & Rivers, *Cumulative and Residual Effects of Teachers on Future Student Academic Achievement*, 1996.

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Individuals Who Enter Teaching Through Alternative Routes

- Forty states provided alternate routes into teaching in 1998-99.
- In 1998-99, 14,133 teachers entered the teaching profession through state-approved alternate routes.

Source: Education Week, *Quality Counts 2000*

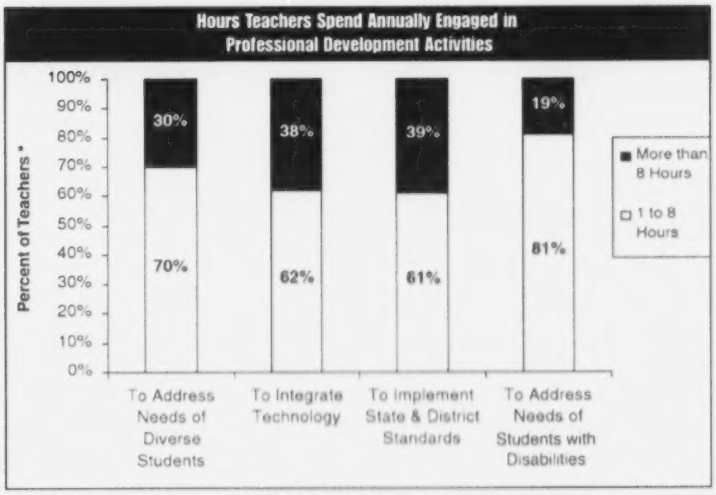
Does Accreditation of Teacher Education Institutions Work?

A study conducted by the Educational Testing Service found that graduates of NCATE-accredited colleges of education pass ETS content exams for teacher licensing at a higher rate (91 percent) than graduates of unaccredited schools (84 percent).

Source: Educational Testing Service, *The Academic Quality of Prospective Teachers: The Impact of Admissions and Licensure Testing*, May 1999.

How Much Time Do Teachers Spend in Professional Development Activities Annually?

A majority of teachers currently engage in some type of professional development. However, most of these teachers receive eight hours or less of professional development a year.



Source: U.S. Department of Education, National Center for Education Statistics, *Teacher Quality: A Report on the Preparation and Qualifications of Public School Teachers*, 1999.

*Percents are based on those who participated in professional development activities in a particular content area.

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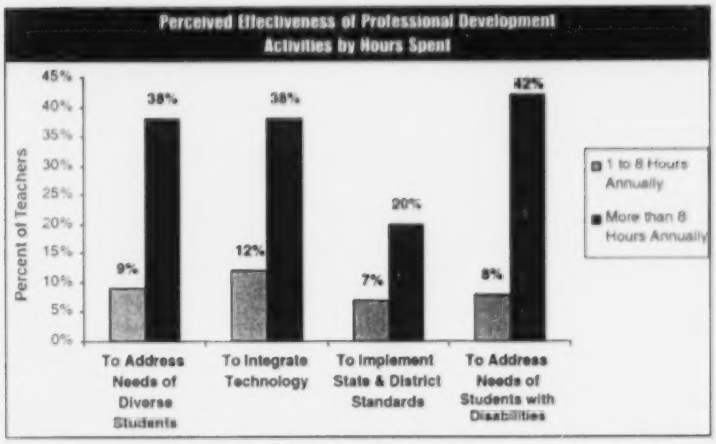
Not surprisingly, teachers who spent eight hours or less engaged in professional development were less likely to find activities useful.



Source: U.S. Department of Education, National Center for Education Statistics, Teacher Quality: A Report on the Preparation and Qualifications of Public School Teachers, 1999.

What Types of Professional Development Did Teachers Consider Most Helpful?

Most teachers indicated that professional development activities, both traditional and collaborative, were at least moderately beneficial to their classroom teaching techniques.

Teachers found that professional development in content areas improved their teaching techniques at least "moderately."

Source: U.S. Department of Education, National Center for Education Statistics, Teacher Quality: A Report on the Preparation and Qualifications of Public School Teachers, 1999.

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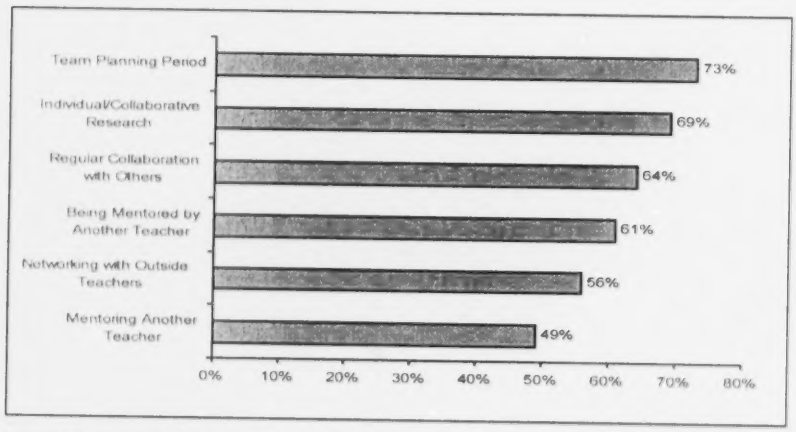
Teachers found that professional development involving collaborative activities improved their teaching techniques at least "moderately" as well.



Source: U.S. Department of Education, National Center for Education Statistics, Teacher Quality: A Report on the Preparation and Qualifications of Public School Teachers, 1999.

Teacher Training and Student Test Scores

According to a recent report by the Educational Testing Service, better-prepared and better-trained teachers do improve student performance. The study found that students in math and science were more likely to have higher scores on the National Assessment of Educational Progress (NAEP) relative to the grade average than their grade-level peers if their teachers were better-prepared. Attributes of effective teachers included having a major or minor in the subject they teach, receiving professional development, emphasizing higher-order thinking skills, using hands-on learning techniques, and frequent testing.

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The Effects of Teacher Quality on Student Outcomes

ASPECT OF TEACHER QUALITY	DIFFERENCE IN SCORES*
Math	
Major/minor in math/math education	39%
Professional development in working with student populations	107%
Professional development in higher-order thinking skills	40%
Hands-on learning	72%
Higher-order thinking skills	39%
Using portfolios and projects instead of tests	-46%
Science	
Major/minor in science/science education	39%
Professional development in laboratory skills	44%
Professional development in classroom management	-37%
Hands-on learning	40%
Giving frequent tests	92%

* Relative to the average grade-level score.

Source: Educational Testing Service, *How Teaching Matters*, 2000.

Are National Board Certified Teachers More Effective?

A recent study by researchers at the University of North Carolina, Greensboro, found that National Board Certified Teachers (NBCT) scored significantly higher than non-NBCTs on eleven out of thirteen measures of effective teaching. The students of NBCTs also demonstrated greater learning, as determined by evaluations of student work.

Source: Bond, L., Jaeger, R.M., Smith, T., and Hattie, J.A. *Accomplished Teaching Validation Study*, 2000.

How Much Time Do Teachers Currently Have to Prepare for Class?

Most elementary school teachers have 8.3 minutes of in-school preparation time for every hour taught. High School teachers have just 13 minutes of preparation time per class hour.

Source: National Education Association, *Status of the American Public School Teacher, 1995-96*.

How Much of A School District's Budget Goes toward Professional Development?

School districts spend only 1 percent to 3 percent of their resources on teacher development, as compared to much higher expenditures in most corporations and in other countries' schools.

Source: Miller, Lord and Dorney, *Staff Development for Teachers: A Study of Configurations and Costs in Four Districts*, 1994.

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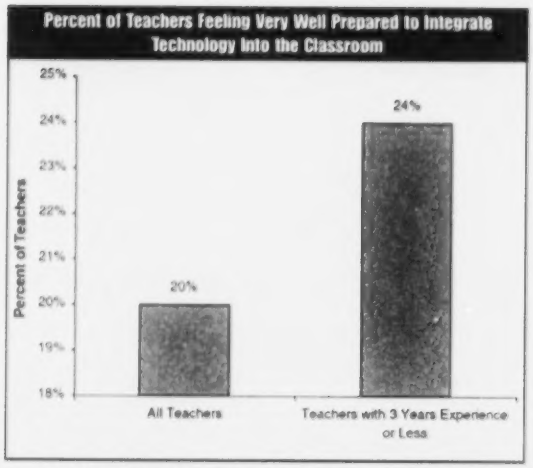
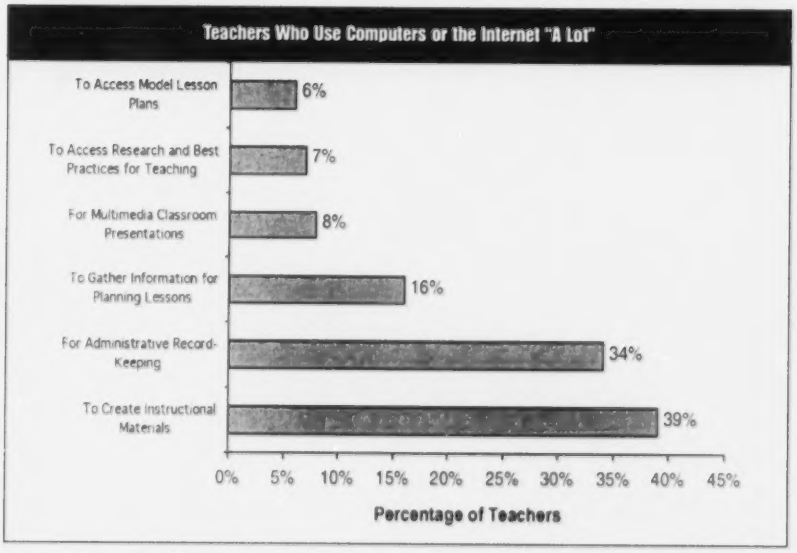
How Many Teachers Feel Prepared to Use Technology?

Today's workplace has been transformed by technology. Yet, only a small percentage of teachers feel prepared to integrate technology into the classroom.



Source: U.S. Department of Education, National Center for Education Statistics, *Teacher Quality: A Report on the Preparation and Qualifications of Public School Teachers*, 1999.

Most teachers do not utilize computers or the Internet on a regular basis.



Source: U.S. Department of Education, National Center for Education Statistics, *Teacher Use of Computers and the Internet in Public Schools*, 2000.

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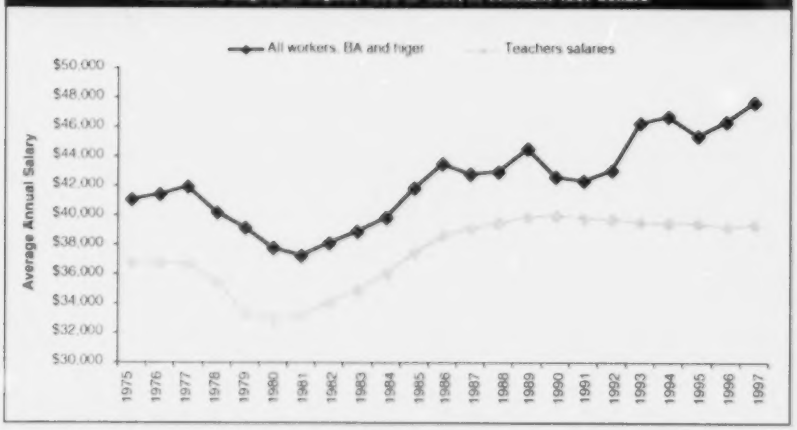
Teacher Pay

How Much Are Teachers Paid?

Teacher salaries have historically lagged behind those of other workers with similar educational attainment. While teachers' salaries have risen in recent years, they have failed to benefit from the explosive growth of salaries in other professions. As a result, the income disparity between teachers and other workers with similar educational attainment is widening.

Change in Salary Levels of Public School Teachers and All Workers with a Bachelor's Degree or Higher, 1975 to 1997, in Constant 1997 Dollars



Source: U.S. Department of Education, National Center for Education Statistics and U.S. Department of Labor, Bureau of Labor Statistics

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How Much Do Teachers Make in Comparison With Other Professionals?

Today's average annual teacher salary represents an increase of only $135 (or 70 cents a day) in constant dollars over the average salary in 1972-73. Indeed, when compared to all workers with a bachelor's degree or higher, teacher salaries lag considerably. Since 1975, teacher salaries increased 7 percent in constant dollars, while salaries of all workers with a bachelor's degree or higher rose 16 percent.

Source: American Federation of Teachers, *Survey & Analysis of Teacher Salary Trends 1999*; U.S. Department of Labor, Bureau of Labor Statistics and the U.S. Department of Education, National Center for Education Statistics.

Source: U.S. Department of Labor, Bureau of Labor Statistics, *Occupational Outlook Handbook, 2000-01*.

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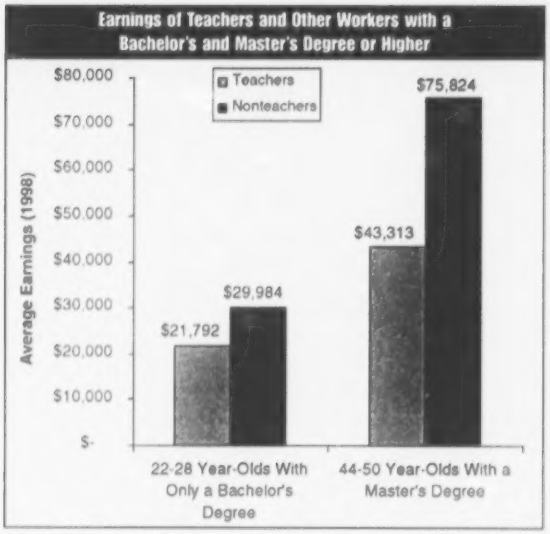
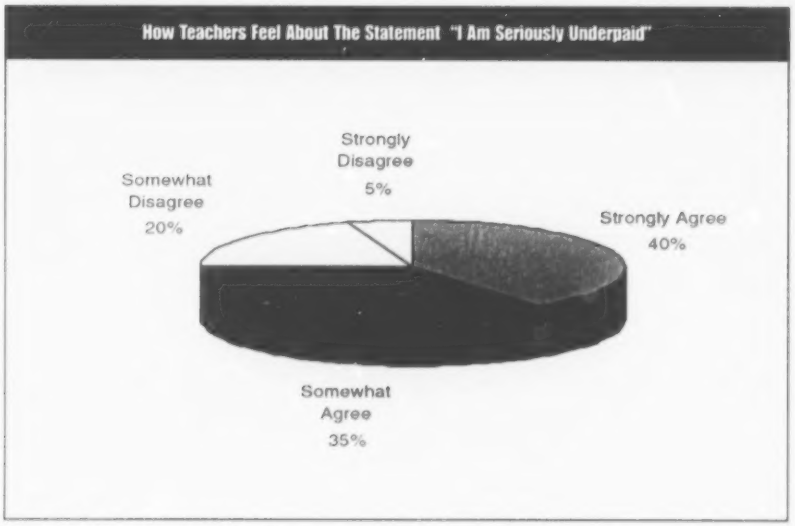
The earnings gap widens when teachers with a Masters' Degree are compared with other similarly educated professionals.



Source: Education Week, *Quality Counts 2000*

How Do Teachers View Their Current Compensation Level?

Teachers recognize that their salaries have not kept pace with those of other professionals.


How Teachers Feel About The Statement "I Am Seriously Underpaid"
Strongly Disagree 5%
Somewhat Disagree 20%
Strongly Agree 40%
Somewhat Agree 35%

Source: Public Agenda, *A Sense of Calling*, 2000

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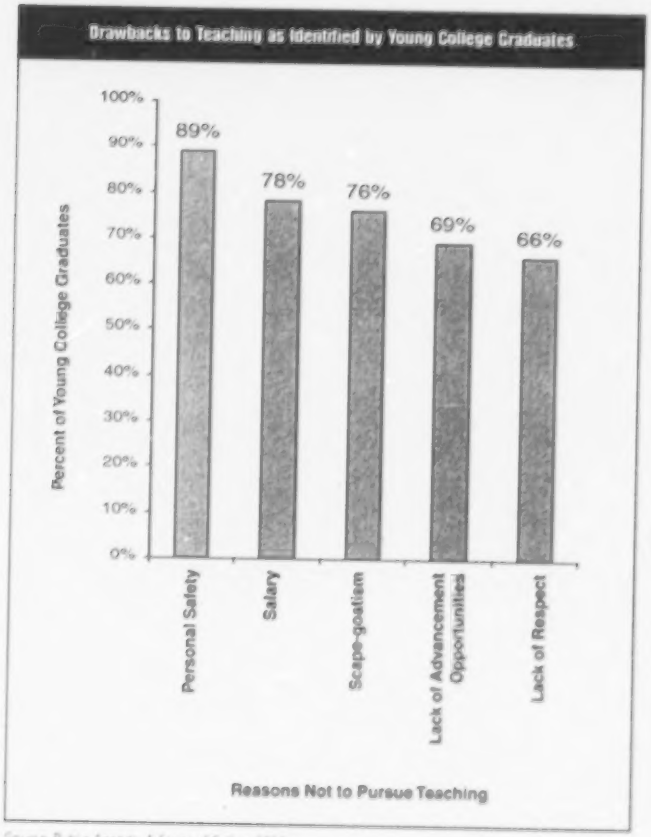
What Effect Would Raising Pay Have on the Teaching Pool?

Starting teacher salaries are low, and new teachers know it. In fact, more than half of new teachers believe that raising pay would be a "very effective" method of improving teacher quality.

Source: Public Agenda, A Sense of Calling, 2000

Raising pay would have a positive effect on the size of the teaching pool. **Almost half (47 percent) of young college graduates would be more likely to consider becoming a public school teacher if teaching paid more than it does now.** Yet they see many drawbacks to the profession beyond low salaries, including personal safety, limited advancement options and lack of respect.



Source: Public Agenda, A Sense of Calling, 2000

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How Do Teachers Feel About Pay-For-Performance?

Today, more teachers than ever before support some form of pay-for-performance compensation. Forty percent of teachers favored pay-for-performance in 1998 compared to 31 percent in 1989 and 32 percent in 1984.

Source: Fifth Phi Delta Kappa Poll of Teachers' Attitudes Toward the Public Schools, 1999.

Sixty-nine percent of teachers support raising the salaries of teachers who are highly effective in raising student achievement.

Source: Public Agenda, *A Sense of Calling*, 2000.

What States Have Incentives in Place to Encourage Teachers to Teach?

- Twenty-seven states provide scholarships or forgivable loans to prospective teachers, but only six (California, Texas, Arkansas, Illinois, Tennessee, and South Carolina) use such incentives to help fill both shortage subject areas and hard-to-staff schools.
- An additional twelve states target such incentives to fill shortages in specific subjects while another four target such incentives to fill shortages in hard-to-staff schools.

Source: Education Week, *Quality Counts 2000*

States Providing Financial Incentives to Teach

Source: Education Week, *Quality Counts 2000*

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The Current School Environment

Why Do Teachers Leave?

Between 1/3 and 40 percent of those who graduate fully qualified to teach do not go into teaching and of those who do, about 1/3 leave within the first three years.

Source: National Commission for Teaching and America's Future, *What Matters Most*, 1996.

Lack of recognition and support is a major factor in teacher attrition. 90 percent of new teachers believe that teaching requires more talent and hard work than other jobs, yet they are neither compensated nor respected for their efforts.

Source: Public Agenda, *A Sense of Calling*, 2000.

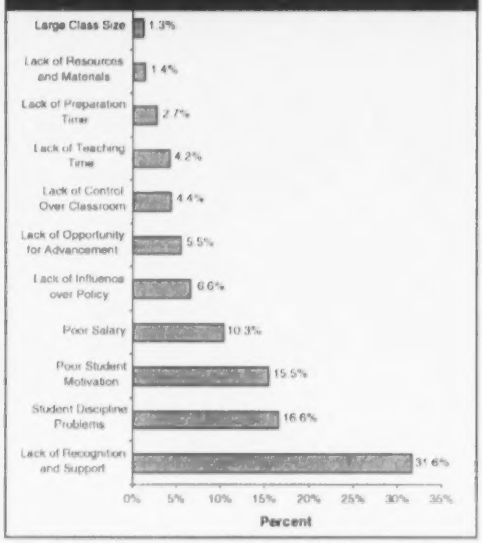
What Role Do Teachers Play in Making Important School Decisions?

Only 58.3 percent of public school teachers reported that teachers participated in making important decisions in their schools.

Source: U.S. Department of Education, National Center for Education Statistics, *Schools and Staffing Survey, 1993-94*.

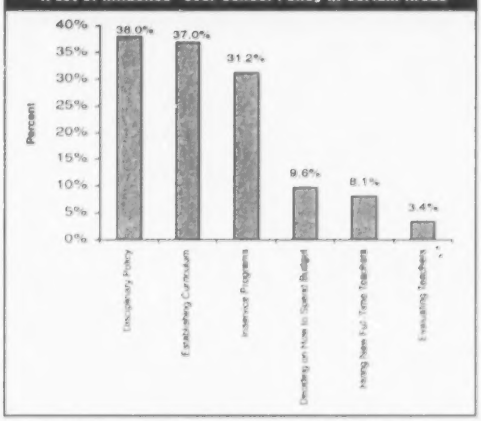
Most teachers do not feel that they influence school policy.

Reasons Teachers Cite for Leaving Teaching



Source: U.S. Department of Education, National Center for Education Statistics, *Teacher Follow-Up Survey, 1994-95*.

Percentage of Teachers Who Report That They Had "A Lot of Influence" Over School Policy in Certain Areas



Source: U.S. Department of Education, National Center for Education Statistics, *Schools and Staffing Survey, 1993-94*.

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Appendix

Teacher Data for All 50 States

Alabama	
Number of Public School Teachers, 1998	46,196
Public School Enrollment, 1998	758,816
Projected Public School Enrollment, 2009	*763,000*
Percent Change in the Number of Teachers, 1990-1998	27%
Percent Change in the Number of Students, 1990-1998	5%
Average Teacher Salary	$35,820
As a Percent of the National Average	88%
As Compared to Workers with Bachelors Degree or Higher in the State	70%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	37%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	44
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	900

Alaska	
Number of Public School Teachers, 1998	7,858
Public School Enrollment, 1998	134,374
Projected Public School Enrollment, 2009	*142,000*
Percent Change in the Number of Teachers, 1990-1998	17%
Percent Change in the Number of Students, 1990-1998	18%
Average Teacher Salary	$46,845
As a Percent of the National Average	115%
As Compared to Workers with Bachelors Degree or Higher in the State	117%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	36%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	213
Number of National Board Certified Teachers	10
State Offers Alternative Routes to Teaching Certification	No
Number of Teachers Entering Via Alternative Routes, 1998-99	NA

Source: US Department of Education NCES Digest of Education Statistics 1999, Digest of Education Statistics 1999 Projections of Education Statistics to 2009, Education Week Quality Counts 2000, National Education Association Teacher Salary Data, National Board for Professional Teaching Standards

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Arizona	
Number of Public School Teachers, 1998	42,032
Public School Enrollment, 1998	829,252
Projected Public School Enrollment, 2009	*1,011,000*
Percent Change in the Number of Teachers, 1990-1998	27%
Percent Change in the Number of Students, 1990-1998	20%
Average Teacher Salary	$35,025
As a Percent of the National Average	86%
As Compared to Workers with Bachelors Degree or Higher in the State	72%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	42%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	50
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	Unavailable

Arkansas	
Number of Public School Teachers, 1998	26,971
Public School Enrollment, 1998	455,647
Projected Public School Enrollment, 2009	*458,000*
Percent Change in the Number of Teachers, 1990-1998	4%
Percent Change in the Number of Students, 1990-1998	4%
Average Teacher Salary	$32,350
As a Percent of the National Average	80%
As Compared to Workers with Bachelors Degree or Higher in the State	72%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	40%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	404
Number of National Board Certified Teachers	11
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	400

Source: US Department of Education NCES Digest of Education Statistics 1999, Digest of Education Statistics 1999, Projections of Education Statistics to 2009, Education Week Quality Counts 2000, National Education Association Teacher Salary Data, National Board for Professional Teaching Standards

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California	
Number of Public School Teachers, 1998	270,639
Public School Enrollment, 1998	5,828,938
Projected Public School Enrollment, 2009	*6,450,000*
Percent Change in the Number of Teachers, 1990-1998	25%
Percent Change in the Number of Students, 1990-1998	18%
Average Teacher Salary	$45,400
As a Percent of the National Average	118%
As Compared to Workers with Bachelors Degree or Higher in the State	100%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	49%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	4,512
Number of National Board Certified Teachers	347
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	4,574

Colorado	
Number of Public School Teachers, 1998	38,975
Public School Enrollment, 1998	699,135
Projected Public School Enrollment, 2009	*750,000*
Percent Change in the Number of Teachers, 1990-1998	21%
Percent Change in the Number of Students, 1990-1998	12%
Average Teacher Salary	$38,025
As a Percent of the National Average	94%
As Compared to Workers with Bachelors Degree or Higher in the State	82%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	34%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	68
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	194

Source: US Department of Education, NCES *Digest of Education Statistics, 1992*, *Digest of Education Statistics 1999*, *Projections of Education Statistics to 2009*; Education Week, *Quality Counts 2000*; National Education Association Teacher Salary Data; National Board for Professional Teaching Standards.

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Connecticut	
Number of Public School Teachers, 1998	40,754
Public School Enrollment, 1998	544,690
Projected Public School Enrollment, 2009	*519,000*
Percent Change in the Number of Teachers, 1990-1998	18%
Percent Change in the Number of Students, 1990-1998	16%
Average Teacher Salary	$51,584
As a Percent of the National Average	127%
As Compared to Workers with Bachelors Degree or Higher in the State	111%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	26%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	23
Number of National Board Certified Teachers	33
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	159

Delaware	
Number of Public School Teachers, 1998	6,701
Public School Enrollment, 1998	113,167
Projected Public School Enrollment, 2009	*113,000*
Percent Change in the Number of Teachers, 1990-1998	12%
Percent Change in the Number of Students, 1990-1998	14%
Average Teacher Salary	$43,164
As a Percent of the National Average	106%
As Compared to Workers with Bachelors Degree or Higher in the State	91%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	29%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	22
Number of National Board Certified Teachers	38
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	45

Source: US Department of Education, NCES *Digest of Education Statistics, 1992*, *Digest of Education Statistics, 1999*, *Projections of Education Statistics to 2009*; Education Week *Quality Counts 2000*; National Education Association Teacher Salary Data; National Board for Professional Teaching Standards

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Florida	
Number of Public School Teachers, 1998	128,791
Public School Enrollment, 1998	2,335,124
Projected Public School Enrollment, 2009	*2,396,000*
Percent Change in the Number of Teachers, 1990-1998	19%
Percent Change in the Number of Students, 1990-1998	25%
Average Teacher Salary	$35,916
As a Percent of the National Average	89%
As Compared to Workers with Bachelors Degree or Higher in the State	74%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	38%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	4,088
Number of National Board Certified Teachers	568
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	428

Georgia	
Number of Public School Teachers, 1998	87,555
Public School Enrollment, 1998	1,401,291
Projected Public School Enrollment, 2009	*1,541,000*
Percent Change in the Number of Teachers, 1990-1998	39%
Percent Change in the Number of Students, 1990-1998	22%
Average Teacher Salary	$39,675
As a Percent of the National Average	98%
As Compared to Workers with Bachelors Degree or Higher in the State	79%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	32%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	2,359
Number of National Board Certified Teachers	61
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	Unavailable

Source: US Department of Education, NCES, *Digest of Education Statistics, 1999*; *Digest of Education Statistics 1999, Projections of Education Statistics to 2009*; Education Week, *Quality Counts 2000*; National Education Association Teacher Salary Data; National Board for Professional Teaching Standards

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Hawaii	
Number of Public School Teachers, 1998	10,550
Public School Enrollment, 1998	187,395
Projected Public School Enrollment, 2009	*227,000*
Percent Change in the Number of Teachers, 1990-1998	16%
Percent Change in the Number of Students, 1990-1998	9%
Average Teacher Salary	$40,377
As a Percent of the National Average	99%
As Compared to Workers with Bachelors Degree or Higher in the State	118%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	33%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	161
Number of National Board Certified Teachers	2
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	158

Idaho	
Number of Public School Teachers, 1998	14,100
Public School Enrollment, 1998	245,100
Projected Public School Enrollment, 2009	*297,000*
Percent Change in the Number of Teachers, 1990-1998	25%
Percent Change in the Number of Students, 1990-1998	11%
Average Teacher Salary	$34,063
As a Percent of the National Average	84%
As Compared to Workers with Bachelors Degree or Higher in the State	76%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	44%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	91
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	8

Source: US Department of Education NCES *Digest of Education Statistics 1992*, *Digest of Education Statistics 1999*, *Projections of Education Statistics to 2009*; Education Week *Quality Counts 2000*; National Education Association Teacher Salary Data; National Board for Professional Teaching Standards

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Illinois	
Number of Public School Teachers, 1998	122,775
Public School Enrollment, 1998	2,022,108
Projected Public School Enrollment, 2009	*2,215,000*
Percent Change in the Number of Teachers, 1990-1998	13%
Percent Change in the Number of Students, 1990-1998	9%
Average Teacher Salary	$45,569
As a Percent of the National Average	112%
As Compared to Workers with Bachelors Degree or Higher in the State	89%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	28%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	682
Number of National Board Certified Teachers	88
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	24

Indiana	
Number of Public School Teachers, 1998	57,927
Public School Enrollment, 1998	989,134
Projected Public School Enrollment, 2009	*1,022,000*
Percent Change in the Number of Teachers, 1990-1998	6%
Percent Change in the Number of Students, 1990-1998	4%
Average Teacher Salary	$41,163
As a Percent of the National Average	101%
As Compared to Workers with Bachelors Degree or Higher in the State	82%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	30%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	41
State Offers Alternative Routes to Teaching Certification	No
Number of Teachers Entering Via Alternative Routes, 1998-99	NA

Source: US Department of Education, NCES Digest of Education Statistics 1997, Digest of Education Statistics 1999, Projections of Education Statistics to 2009; Education Week, Quality Counts 2000; National Education Association Teacher Salary Data; National Board for Professional Teaching Standards

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Iowa	
Number of Public School Teachers, 1998	**33,686**
Public School Enrollment, 1998	502,571
Projected Public School Enrollment, 2009	*473,000*
Percent Change in the Number of Teachers, 1990-1998	9%
Percent Change in the Number of Students, 1990-1998	**4%**
Average Teacher Salary	$34,927
As a Percent of the National Average	**86%**
As Compared to Workers with Bachelors Degree or Higher in the State	75%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	**30%**
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	**80**
Number of National Board Certified Teachers	158
State Offers Alternative Routes to Teaching Certification	**No**
Number of Teachers Entering Via Alternative Routes, 1998-99	NA

Kansas	
Number of Public School Teachers, 1998	**31,493**
Public School Enrollment, 1998	469,850
Projected Public School Enrollment, 2009	*464,000*
Percent Change in the Number of Teachers, 1990-1998	8%
Percent Change in the Number of Students, 1990-1998	**8%**
Average Teacher Salary	$37,405
As a Percent of the National Average	**92%**
As Compared to Workers with Bachelors Degree or Higher in the State	78%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	**40%**
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	**NA**
Number of National Board Certified Teachers	28
State Offers Alternative Routes to Teaching Certification	**Yes**
Number of Teachers Entering Via Alternative Routes, 1998-99	Unavailable

Source: US Department of Education: NCES *Digest of Education Statistics 1992*, *Digest of Education Statistics 1999*, *Projections of Education Statistics to 2009*; Education Week *Quality Counts 2000*; National Education Association Teacher Salary Data; National Board for Professional Teaching Standards

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Kentucky	
Number of Public School Teachers, 1998	40,381
Public School Enrollment, 1998	646,092
Projected Public School Enrollment, 2009	*639,000*
Percent Change in the Number of Teachers, 1990-1998	10%
Percent Change in the Number of Students, 1990-1998	2%
Average Teacher Salary	$35,526
As a Percent of the National Average	88%
As Compared to Workers with Bachelors Degree or Higher in the State	65%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	47%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	646
Number of National Board Certified Teachers	35
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	148

Louisiana	
Number of Public School Teachers, 1998	48,928
Public School Enrollment, 1998	753,722
Projected Public School Enrollment, 2009	*751,000*
Percent Change in the Number of Teachers, 1990-1998	10%
Percent Change in the Number of Students, 1990-1998	-4%
Average Teacher Salary	$32,510
As a Percent of the National Average	80%
As Compared to Workers with Bachelors Degree or Higher in the State	62%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	50%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	6,034
Number of National Board Certified Teachers	14
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	478

1 Growth from 1989-1998. 1990 total not available.

Source: US Department of Education, NCES, Digest of Education Statistics 1999; Digest of Education Statistics 1999 Press Release; Projections of Education Statistics to 2009; Education Week, Quality Counts 2000; National Education Association Teacher Salary Data; National Board for Professional Teaching Standards.

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Maine	
Number of Public School Teachers, 1998	16,877
Public School Enrollment, 1998	219,741
Projected Public School Enrollment, 2009	*193,000*
Percent Change in the Number of Teachers, 1990-1998	9%
Percent Change in the Number of Students, 1990-1998	2%
Average Teacher Salary	$34,906
As a Percent of the National Average	86%
As Compared to Workers with Bachelors Degree or Higher in the State	81%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	41%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	180
Number of National Board Certified Teachers	7
State Offers Alternative Routes to Teaching Certification	No
Number of Teachers Entering Via Alternative Routes, 1998-99	NA

Maryland	
Number of Public School Teachers, 1998	49,490
Public School Enrollment, 1998	837,250
Projected Public School Enrollment, 2009	*849,000*
Percent Change in the Number of Teachers, 1990-1998	16%
Percent Change in the Number of Students, 1990-1998	17%
Average Teacher Salary	$42,526
As a Percent of the National Average	105%
As Compared to Workers with Bachelors Degree or Higher in the State	88%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	28%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	1,072
Number of National Board Certified Teachers	27
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	55

Source: US Department of Education NCES Digest of Education Statistics, 1999; Digest of Education Statistics, 1999; Projections of Education Statistics to 2009; Education Week Quality Counts 2000; National Education Association Teacher Salary Data; National Board for Professional Teaching Standards

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Massachusetts	
Number of Public School Teachers, 1998	68,482
Public School Enrollment, 1998	964,358
Projected Public School Enrollment, 2009	*938,000*
Percent Change in the Number of Teachers, 1990-1998	27%
Percent Change in the Number of Students, 1990-1998	16%
Average Teacher Salary	$45,075
As a Percent of the National Average	111%
As Compared to Workers with Bachelors Degree or Higher in the State	101%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	28%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	546
Number of National Board Certified Teachers	73
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	336

Michigan	
Number of Public School Teachers, 1998	90,200
Public School Enrollment, 1998	1,692,700
Projected Public School Enrollment, 2009	*1,617,000*
Percent Change in the Number of Teachers, 1990-1998	13%
Percent Change in the Number of Students, 1990-1998	7%
Average Teacher Salary	$48,207
As a Percent of the National Average	119%
As Compared to Workers with Bachelors Degree or Higher in the State	89%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	33%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	75
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	Unavailable

Source: US Department of Education, NCES, *Digest of Education Statistics, 1999*, *Digest of Education Statistics 1999 Projections of Education Statistics to 2009*, *Education Week*, *Quality Counts 2000*, National Education Association Teacher Salary Data, National Board for Professional Teaching Standards.

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Minnesota	
Number of Public School Teachers, 1998	52,700
Public School Enrollment, 1998	857,900
Projected Public School Enrollment, 2009	*829,000*
Percent Change in the Number of Teachers, 1990-1998	20%
Percent Change in the Number of Students, 1990-1998	13%
Average Teacher Salary	$39,458
As a Percent of the National Average	97%
As Compared to Workers with Bachelors Degree or Higher in the State	81%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	19%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	42
Number of National Board Certified Teachers	110
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	29

Mississippi	
Number of Public School Teachers, 1998	29,840
Public School Enrollment, 1998	502,382
Projected Public School Enrollment, 2009	*509,000*
Percent Change in the Number of Teachers, 1990-1998	6%
Percent Change in the Number of Students, 1990-1998	0%
Average Teacher Salary	$29,530
As a Percent of the National Average	73%
As Compared to Workers with Bachelors Degree or Higher in the State	65%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	39%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	475
Number of National Board Certified Teachers	357
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	554

Source: US Department of Education NCES, Digest of Education Statistics, 2000, Projections of Education Statistics to 2009, Education Week, Quality Counts 2000, National Education Association Teacher Salary Data, National Board for Professional Teaching Standards

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Missouri	
Number of Public School Teachers, 1998	61,970
Public School Enrollment, 1998	921,391
Projected Public School Enrollment, 2009	*902,000*
Percent Change in the Number of Teachers, 1990-1998	18%
Percent Change in the Number of Students, 1990-1998	13%
Average Teacher Salary	$34,746
As a Percent of the National Average	86%
As Compared to Workers with Bachelors Degree or Higher in the State	80%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	35%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	340
Number of National Board Certified Teachers	29
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	12

Montana	
Number of Public School Teachers, 1998	10,200
Public School Enrollment, 1998	161,023
Projected Public School Enrollment, 2009	*169,000*
Percent Change in the Number of Teachers, 1990-1998	6%
Percent Change in the Number of Students, 1990-1998	5%
Average Teacher Salary	$31,356
As a Percent of the National Average	77%
As Compared to Workers with Bachelors Degree or Higher in the State	90%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	36%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	12
State Offers Alternative Routes to Teaching Certification	No
Number of Teachers Entering Via Alternative Routes, 1998-99	NA

Source: US Department of Education: NCES Digest of Education Statistics, 1999; Digest of Education Statistics 1999, Projections of Education Statistics to 2009; Education Week, Quality Counts 2000; National Education Association Teacher Salary Data; National Board for Professional Teaching Standards.

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Nebraska	
Number of Public School Teachers, 1998	20,237
Public School Enrollment, 1998	291,010
Projected Public School Enrollment, 2009	*288,000*
Percent Change in the Number of Teachers, 1990-1998	8%
Percent Change in the Number of Students, 1990-1998	6%
Average Teacher Salary	$32,880
As a Percent of the National Average	81%
As Compared to Workers with Bachelors Degree or Higher in the State	74%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	25%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	8
State Offers Alternative Routes to Teaching Certification	No
Number of Teachers Entering Via Alternative Routes, 1998-99	NA

Nevada	
Number of Public School Teachers, 1998	16,835
Public School Enrollment, 1998	311,063
Projected Public School Enrollment, 2009	*383,000*
Percent Change in the Number of Teachers, 1990-1998	62%
Percent Change in the Number of Students, 1990-1998	55%
Average Teacher Salary	$38,883
As a Percent of the National Average	96%
As Compared to Workers with Bachelors Degree or Higher in the State	81%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	34%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	0
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	Unavailable

Source: US Department of Education NCES, *Digest of Education Statistics 1999*, *Digest of Education Statistics 2000*, *Projections of Education Statistics to 2009*, Education Week, *Quality Counts 2000*, National Education Association Teacher Salary Data, National Board for Professional Teaching Standards.

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New Hampshire	
Number of Public School Teachers, 1998	12,469
Public School Enrollment, 1998	194,512
Projected Public School Enrollment, 2009	*199,000*
Percent Change in the Number of Teachers, 1990-1998	17%
Percent Change in the Number of Students, 1990-1998	13%
Average Teacher Salary	$37,405
As a Percent of the National Average	92%
As Compared to Workers with Bachelors Degree or Higher in the State	83%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	29%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	3
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	140

New Jersey	
Number of Public School Teachers, 1998	93,102
Public School Enrollment, 1998	1,293,840
Projected Public School Enrollment, 2009	*1,253,000*
Percent Change in the Number of Teachers, 1990-1998	16%
Percent Change in the Number of Students, 1990-1998	19%
Average Teacher Salary	$51,193
As a Percent of the National Average	126%
As Compared to Workers with Bachelors Degree or Higher in the State	105%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	31%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	24
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	1,223

Source: US Department of Education NCES, Digest of Education Statistics 1999, Projections of Education Statistics to 2009, Issues in Views, Survey and Data, National Education Association Teacher Salary Data, National Board for Professional Teaching Standards

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New Mexico	
Number of Public School Teachers, 1998	19,786
Public School Enrollment, 1998	328,753
Projected Public School Enrollment, 2009	*390,000*
Percent Change in the Number of Teachers, 1990-1998	18%
Percent Change in the Number of Students, 1990-1998	9%
Average Teacher Salary	$32,398
As a Percent of the National Average	80%
As Compared to Workers with Bachelors Degree or Higher in the State	75%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	48%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	25
Number of National Board Certified Teachers	75
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	73

New York	
Number of Public School Teachers, 1998	201,000
Public School Enrollment, 1998	2,852,000
Projected Public School Enrollment, 2009	*2,860,000*
Percent Change in the Number of Teachers, 1990-1998	14%
Percent Change in the Number of Students, 1990-1998	10%
Average Teacher Salary	$49,437
As a Percent of the National Average	122%
As Compared to Workers with Bachelors Degree or Higher in the State	101%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	25%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	63
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	490

Source: U.S. Department of Education, NCES, *Digest of Education Statistics, 2000*, *Digest of Education Statistics, 1999*, *Projections of Education Statistics to 2009*; *Education Week*, *Quality Counts 2000*; National Education Association Teacher Salary Data; National Board for Professional Teaching Standards.

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North Carolina	
Number of Public School Teachers, 1998	77,486
Public School Enrollment, 1998	1,245,608
Projected Public School Enrollment, 2009	*1,354,000*
Percent Change in the Number of Teachers, 1990-1998	21%
Percent Change in the Number of Students, 1990-1998	15%
Average Teacher Salary	$36,098
As a Percent of the National Average	89%
As Compared to Workers with Bachelors Degree or Higher in the State	80%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	34%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	2,465
Number of National Board Certified Teachers	1,270
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	Unavailable

North Dakota	
Number of Public School Teachers, 1998	7,840
Public School Enrollment, 1998	113,929
Projected Public School Enrollment, 2009	*110,000*
Percent Change in the Number of Teachers, 1990-1998	3%
Percent Change in the Number of Students, 1990-1998	-3%
Average Teacher Salary	$28,976
As a Percent of the National Average	71%
As Compared to Workers with Bachelors Degree or Higher in the State	76%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	24%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	4
State Offers Alternative Routes to Teaching Certification	No
Number of Teachers Entering Via Alternative Routes, 1998-99	NA

Source: U.S. Department of Education, NCES, Digest of Education Statistics, 2000; Projections of Education Statistics to 2009; Education Week, Quality Counts 2000; National Education Association, Rankings and Estimates; National Board for Professional Teaching Standards

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Ohio	
Number of Public School Teachers, 1998	111,283
Public School Enrollment, 1998	1,849,685
Projected Public School Enrollment, 2009	*1,760,000*
Percent Change in the Number of Teachers, 1990-1998	8%
Percent Change in the Number of Students, 1990-1998	4%
Average Teacher Salary	$40,566
As a Percent of the National Average	100%
As Compared to Workers with Bachelors Degree or Higher in the State	76%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	39%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	598
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	0

Oklahoma	
Number of Public School Teachers, 1998	40,943
Public School Enrollment, 1998	626,674
Projected Public School Enrollment, 2009	*587,000*
Percent Change in the Number of Teachers, 1990-1998	10%
Percent Change in the Number of Students, 1990-1998	8%
Average Teacher Salary	$31,149
As a Percent of the National Average	77%
As Compared to Workers with Bachelors Degree or Higher in the State	62%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	39%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	119
Number of National Board Certified Teachers	149
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	363

Source: U.S. Department of Education, NCES [illegible]

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Oregon	
Number of Public School Teachers, 1998	27,289
Public School Enrollment, 1998	543,176
Projected Public School Enrollment, 2009	567,000
Percent Change in the Number of Teachers, 1990-1998	4%
Percent Change in the Number of Students, 1990-1998	15%
Average Teacher Salary	$42,843
As a Percent of the National Average	106%
As Compared to Workers with Bachelors Degree or Higher in the State	94%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	41%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	0
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	0

Pennsylvania	
Number of Public School Teachers, 1998	108,350
Public School Enrollment, 1998	1,818,090
Projected Public School Enrollment, 2009	1,753,000
Percent Change in the Number of Teachers, 1990-1998	8%
Percent Change in the Number of Students, 1990-1998	9%
Average Teacher Salary	$48,457
As a Percent of the National Average	119%
As Compared to Workers with Bachelors Degree or Higher in the State	95%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	28%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	14
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	308

Source: US Department of Education, NCES, *Schools and Staffing Survey, 1993-94 and 1998-99*, Public School Teacher Data File, and *Projections of Education Statistics to 2009*. Note: Data on Secondary Teachers with no Major or Minor in Primary Teaching Area, State Has Tuition Assistance Programs for Prospective Teachers, and Number of National Board Certified Teachers are from the 1998-99 Schools and Staffing Survey. Data on Average Teacher Salary, Average Teacher Salary as a Percent of the National Average, and Average Teacher Salary as Compared to Workers with Bachelors Degree or Higher in the State are from the 1993-94 Schools and Staffing Survey. Data on Total Number of Prospective Teachers Receiving Tuition Assistance, State Offers Alternative Routes to Teaching Certification, and Number of Teachers Entering Via Alternative Routes are from the National Board for Professional Teaching Standards.

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Rhode Island	
Number of Public School Teachers, 1998	10,704
Public School Enrollment, 1998	154,485
Projected Public School Enrollment, 2009	145,000
Percent Change in the Number of Teachers, 1990-1998	12%
Percent Change in the Number of Students, 1990-1998	11%
Average Teacher Salary	$45,650
As a Percent of the National Average	112%
As Compared to Workers with Bachelors Degree or Higher in the State	100%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	24%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	20
State Offers Alternative Routes to Teaching Certification	No
Number of Teachers Entering Via Alternative Routes, 1998-99	NA

South Carolina	
Number of Public School Teachers, 1998	42,120
Public School Enrollment, 1998	644,150
Projected Public School Enrollment, 2009	621,000
Percent Change in the Number of Teachers, 1990-1998	4%
Percent Change in the Number of Students, 1990-1998	4%
Average Teacher Salary	$34,506
As a Percent of the National Average	85%
As Compared to Workers with Bachelors Degree or Higher in the State	69%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	37%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	1,191
Number of National Board Certified Teachers	36
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	191

Source: US Department of Education, NCES, Common Core of Data, Public Elementary/Secondary School Universe Survey, 1998-99; Education Week, Quality Counts 2000; National Association of Teacher Educators; National Board for Professional Teaching Standards

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South Dakota	
Number of Public School Teachers, 1998	9,275
Public School Enrollment, 1998	141,561
Projected Public School Enrollment, 2009	*144,000*
Percent Change in the Number of Teachers, 1990-1998	9%
Percent Change in the Number of Students, 1990-1998	10%
Average Teacher Salary	$28,552
As a Percent of the National Average	70%
As Compared to Workers with Bachelors Degree or Higher in the State	70%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	41%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	1
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	45

Tennessee	
Number of Public School Teachers, 1998	53,119
Public School Enrollment, 1998	908,885
Projected Public School Enrollment, 2009	986,000
Percent Change in the Number of Teachers, 1990-1998	23%
Percent Change in the Number of Students, 1990-1998	10%
Average Teacher Salary	$36,500
As a Percent of the National Average	90%
As Compared to Workers with Bachelors Degree or Higher in the State	68%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	45%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	218
Number of National Board Certified Teachers	21
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	Unavailable

Source: US Department of Education, NCES, *Digest of Education Statistics, 2000*; *Projections of Education Statistics to 2009*; Education Week, *Quality Counts 2001*; National Education Association Teacher Salary Data; National Board for Professional Teaching Standards

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Texas	
Number of Public School Teachers, 1998	254,811
Public School Enrollment, 1998	3,900,488
Projected Public School Enrollment, 2009	*4,352,000*
Percent Change in the Number of Teachers, 1990-1998	21%
Percent Change in the Number of Students, 1990-1998	15%
Average Teacher Salary	$35,041
As a Percent of the National Average	86%
As Compared to Workers with Bachelors Degree or Higher in the State	63%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	49%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	1,700
Number of National Board Certified Teachers	16
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	2,728

Utah	
Number of Public School Teachers, 1998	21,000
Public School Enrollment, 1998	477,061
Projected Public School Enrollment, 2009	*534,000*
Percent Change in the Number of Teachers, 1990-1998	17%
Percent Change in the Number of Students, 1990-1998	7%
Average Teacher Salary	$32,950
As a Percent of the National Average	81%
As Compared to Workers with Bachelors Degree or Higher in the State	69%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	38%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	312
Number of National Board Certified Teachers	2
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	Unavailable

Source: US Department of Education NCES Digest of Education Statistics, 1999, Projections of Education Statistics to 2009, Education Week, Profile of Education Quality, National Education Association Teacher Salary Data, National Board for Professional Teaching Standards

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Vermont	
Number of Public School Teachers, 1998	8,069
Public School Enrollment, 1998	105,442
Projected Public School Enrollment, 2009	*100,000*
Percent Change in the Number of Teachers, 1990-1998	11%
Percent Change in the Number of Students, 1990-1998	10%
Average Teacher Salary	$36,800
As a Percent of the National Average	91%
As Compared to Workers with Bachelors Degree or Higher in the State	92%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	27%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	11
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	50

Virginia	
Number of Public School Teachers, 1998	76,791
Public School Enrollment, 1998	1,125,735
Projected Public School Enrollment, 2009	*1,150,000*
Percent Change in the Number of Teachers, 1990-1998	21%
Percent Change in the Number of Students, 1990-1998	13%
Average Teacher Salary	$37,475
As a Percent of the National Average	92%
As Compared to Workers with Bachelors Degree or Higher in the State	71%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	39%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	100
Number of National Board Certified Teachers	66
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	Unavailable

Source: U.S. Department of Education, NCES, [illegible] Education Week, [illegible] National Board for Professional Teaching Standards.

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Washington	
Number of Public School Teachers, 1998	49,316
Public School Enrollment, 1998	999,628
Projected Public School Enrollment, 2009	1,045,000
Percent Change in the Number of Teachers, 1990-1998	18%
Percent Change in the Number of Students, 1990-1998	19%
Average Teacher Salary	$38,692
As a Percent of the National Average	95%
As Compared to Workers with Bachelors Degree or Higher in the State	85%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	39%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	24
State Offers Alternative Routes to Teaching Certification	No
Number of Teachers Entering Via Alternative Routes, 1998-99	NA

West Virginia	
Number of Public School Teachers, 1998	20,856
Public School Enrollment, 1998	296,332
Projected Public School Enrollment, 2009	283,000
Percent Change in the Number of Teachers, 1990-1998	3%
Percent Change in the Number of Students, 1990-1998	-8%
Average Teacher Salary	$34,244
As a Percent of the National Average	84%
As Compared to Workers with Bachelors Degree or Higher in the State	74%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	40%
State Has Tuition Assistance Programs for Prospective Teachers	Yes
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	69
Number of National Board Certified Teachers	2
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	0

Source: U.S. Department of Education (NCES)

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Wisconsin	
Number of Public School Teachers, 1998	57,837
Public School Enrollment, 1998	888,245
Projected Public School Enrollment, 2009	*859,000*
Percent Change in the Number of Teachers, 1990-1998	17%
Percent Change in the Number of Students, 1990-1998	11%
Average Teacher Salary	$40,657
As a Percent of the National Average	100%
As Compared to Workers with Bachelors Degree or Higher in the State	81%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	37%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	11
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	19

Wyoming	
Number of Public School Teachers, 1998	6,360
Public School Enrollment, 1998	94,411
Projected Public School Enrollment, 2009	*100,000*
Percent Change in the Number of Teachers, 1990-1998	-6%
Percent Change in the Number of Students, 1990-1998	-4%
Average Teacher Salary	$33,500
As a Percent of the National Average	83%
As Compared to Workers with Bachelors Degree or Higher in the State	86%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area:	28%
State Has Tuition Assistance Programs for Prospective Teachers	No
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	NA
Number of National Board Certified Teachers	3
State Offers Alternative Routes to Teaching Certification	Yes
Number of Teachers Entering Via Alternative Routes, 1998-99	11

Source: US Department of Education, NCES, *Digest of Education Statistics, 1999*; *Digest of Education Statistics, 1999, Projections of Education Statistics to 2009*; Education Week, *Quality Counts 2000*; National Education Association, Teacher Salary Data; National Board for Professional Teaching Standards

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United States	
Number of Public School Teachers, 1998	2,787,154
Projected Public School Teachers, 2009	*2,766,000*
Public School Enrollment, 1998	46,349,803
Projected Public School Enrollment, 2009	*48,126,000*
Percent Change in the Number of Teachers, 1990-1998	16%
Percent Change in the Number of Students, 1990-1998	12%
Average Teacher Salary	$40,582
As Compared to Workers with Bachelors Degree or Higher in the Country	82%
Percent of Secondary Teachers with no Major or Minor in Primary Teaching Area	37%
Number of States With Tuition Assistance Programs for Prospective Teachers	27
Total Number of Prospective Teachers Receiving Tuition Assistance, 1998-99	28,078
Total Number of National Board Certified Teachers	4,804
Number of States Offering an Alternative Route to Teaching Certification	40
Total Number of Teachers Entering Teaching Via Alternative Routes, 1998-99	14,113

Source: US Department of Education, NCES, *Digest of Education Statistics, 1999*, *Projections of Education Statistics to 2009*, *Education Week*, *Quality Counts 2000*, National Education Association Teacher Salary Data, National Board for Professional Teaching Standards

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